EA GROUP
Laboratories

AFFIDAVIT

EA Group (VAP Laboratory No. CL0015)

STATE OF OHIO

COUNTY OF LAKE

I, Don Richner, being first duly sworn according to law deposes and states that, to the best of my knowledge, information and belief:

1) I am an adult over the age of eighteen (18) years old and competent to testify herein.

2) I was employed by **EA Group** as **Lab Manager** and was authorized to submit this affidavit on behalf of **EA Group** for the attached report.

3) **EA Group** or it's VAP certified subcontract laboratory performed analysis for **Hart Crowser** concerning a voluntary action for the property located at: **ASW #7398-01.**

4) **EA Group** or it's subcontract laboratory was a certified laboratory pursuant to Ohio Revised Code (ORC) Chapter 3746 and Ohio Administrative Code (OAC) Chapter 3745-300 when it performed the analysis for the purposes of conducting or completing the voluntary action.

5) All of the analyses performed by **EA Group**, or it's subcontract laboratory, for the purposes of conducting or completing the voluntary action at the referenced property, complied with the applicable requirements of ORC Chapter 3746 and rules adopted under OAC 3745-300.

6) The information, data, documents and reports provided for the purposes of conduction or completing the voluntary action at the referenced property are identified in the attachment(s) hereto as **0007-00132.**

7) All information, data, documents and reports submitted by **EA Group**, identified in the attachment(s) of this affidavit and submited for the purposes of conduction or completing this voluntary action are the true, accurate and complete reporting of the results of analysis.

8) **EA Group** has no conflict of interest, as set forth in OAC rules 3745-300-04(I) and 3745-300-05(F)(3), in performing the analysis for **Hart Crowser** for the referenced property.

Don Richner

Further affiant sayeth naught

Donald R Richner
Affiant Signature

Sworn to me this 21st day of July

EUGENE REILLY Eugene Reilly
Notary

COMMISSION EXPIRES 8/20/01

EA GROUP
Laboratories

Laboratory Analytical Report

Hart Crowser
1910 Fairview East
Seattle, WA 98107-3699

Attention:
Will Abercrombie

Project Identification
ASW #7398-01

Purchase Order:

EA Group
Order Number
0007-00132

Donald R. Richner, CIH
Laboratory Manager

July 20, 2000

7118 Industrial Park Blvd. * Mentor, Ohio 44060-5314 * (440) 951-3514 * (800) 875-3514 * FAX (440) 951-3774

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Project Summary

The following analytical report contains the results as requested for samples submitted to EA Group. The results included in this report have been reviewed for compliance with the analytical methods indicated in this report. All data have been found to be compliant with accepted laboratory protocol. Exceptions, if any, are noted below. Analytes appearing in bold type were analyzed at a subcontract facility.

Data Interpretation

For assistance with report interpretation or questions regarding regulatory limits, please contact Client Services at 440-951-3514 or customerservice@eagroup-ohio.com.

Sample Summary

Sample Receive Date: 7/12/00

EAG Sample Identification	Client Sample Identification	EAG Sample Identification	Client Sample Identification

 Unless noted, soil, sludge, and sediment results are reported on dry weight basis. The "Sample Reporting Limit" is based on the method used for analysis and does not refer to any regulatory limit.

Workorder: 0007-00132

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EAG ID: 0007-00132-1 Client ID: SED-1 Sampled: 7/12/2000 Received: 7/12/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Total Organic Carbon: 415.1	82800	1000	mg/kg	7/14/2000	7/14/2000
Arsenic: SW846-6010A	<58 J	58	mg/kg	7/13/2000	7/17/2000
Barium: SW846-6010A	58	12	mg/kg	7/13/2000	7/17/2000
Cadmium: SW846-6010A	53	12	mg/kg	7/13/2000	7/17/2000
Chromium: SW846-6010A	320	12	mg/kg	7/13/2000	7/17/2000
Copper: SW846-6010A	500	12	mg/kg	7/13/2000	7/17/2000
Lead: SW846-6010A	79	23	mg/kg	7/13/2000	7/17/2000
Mercury, SW846-7471	<0.19	0.19	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	340 J	12	mg/kg	7/13/2000	7/17/2000
Selenium: SW846-6010A	<220	220	mg/kg	7/13/2000	7/17/2000
) SW846-6010A	<12	12	mg/kg	7/13/2000	7/17/2000
Zinc: SW846-6010A	1600	12	mg/kg	7/13/2000	7/17/2000
SW846 1311: TCLP Extraction	Completed				7/13/2000
Arsenic, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Barium, TCLP:SW846-6010A	0.21	0.10	mg/liter	7/14/2000	7/18/2000
Cadmium, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Chromium, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Copper, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Lead, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Mercury, TCLP: SW846-7470A	<0.010	0.010	mg/liter	7/14/2000	7/14/2000
Nickel, TCLP:SW846-6010A	1.1	0.10	mg/liter	7/14/2000	7/18/2000
Selenium, TCLP:SW846-6010A	<0.20	0.20	mg/liter	7/14/2000	7/18/2000
Silver, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Zinc, TCLP: SW846-6010A	2.1	0.10	mg/liter	7/14/2000	7/18/2000

EAG ID: 0007-00132-2 Client ID: SED-2 Sampled: 7/12/2000 Received: 7/12/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Total Organic Carbon: 415.1	112000	1000	mg/kg	7/14/2000	7/14/2000

7/24/00 JHL

Workorder: 0007-00132

EAGROUP
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EAG ID: 0007-00132-4 Client ID: SED-4 Sampled: 7/12/2000 Received: 7/12/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Total Organic Carbon: 415.1	99800	1000	mg/kg	7/14/2000	7/14/2000
Arsenic: SW846-6010A	<78 J	78	mg/kg	7/13/2000	7/17/2000
Barium: SW846-6010A	94	16	mg/kg	7/13/2000	7/17/2000
Cadmium: SW846-6010A	78	16	mg/kg	7/13/2000	7/17/2000
Chromium: SW846-6010A	390	16	mg/kg	7/13/2000	7/17/2000
Copper: SW846-6010A	390	16	mg/kg	7/13/2000	7/17/2000
Lead: SW846-6010A	190	31	mg/kg	7/13/2000	7/17/2000
Mercury, SW846-7471	<0.26	0.26	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	450 J	16	mg/kg	7/13/2000	7/17/2000
Selenium: SW846-6010A	<270	270	mg/kg	7/13/2000	7/17/2000
:r: SW846-6010A	<16	16	mg/kg	7/13/2000	7/17/2000
Zinc: SW846-6010A	900	16	mg/kg	7/13/2000	7/17/2000
SW846 1311: TCLP Extraction	Completed				7/13/2000
Arsenic, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Barium, TCLP:SW846-6010A	0.12	0.10	mg/liter	7/14/2000	7/18/2000
Cadmium, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Chromium, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Copper, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Lead, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Mercury, TCLP: SW846-7470A	<0.010	0.010	mg/liter	7/14/2000	7/14/2000
Nickel, TCLP:SW846-6010A	0.51	0.10	mg/liter	7/14/2000	7/18/2000
Selenium, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Silver, TCLP:SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000
Zinc, TCLP: SW846-6010A	<0.10	0.10	mg/liter	7/14/2000	7/18/2000

EAG ID: 0007-00132-5 Client ID: SED-5 Sampled: 7/12/2000 Received: 7/12/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Total Organic Carbon: 415.1	110000	1000	mg/kg	7/14/2000	7/14/2000

7/24/00 JHL

EA GROUP
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Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-1	**QC Batch:**	000000	**Date Received:**	07/12/2000
EAG ID:	0007-00132-001	**Moisture (%)**	57	**Date Prepped:**	
				Date Analyzed:	07/12/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EA GROUP
Laboratories

Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-1	**QC Batch:**	018354	**Date Received:**	07/12/2000
EAG ID:	0007-00132-001	**Moisture (%)**	57	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/15/2000

Parameter	Result	Sample Reporting Limit	Units
N-Nitrosodiphenylamine	<680	680	ug/kg
Phenanthrene	190 J	680	ug/kg
Pyrene	140 J	680	ug/kg
1,2,4-Trichlorobenzene	<680	680	ug/kg
4-Chloro-3-methylphenol	<680	680	ug/kg
2-Chlorophenol	<680	680	ug/kg
2-Methylphenol (o-Cresol)	<680	680	ug/kg
4-Methylphenol (p-Cresol)	<680	680	ug/kg
2,4-Dichlorophenol	<680	680	ug/kg
2,4-Dimethylphenol	<680	680	ug/kg
2,4-Dinitrophenol	<3400	3400	ug/kg
4,6-Dinitro-2-methylphenol	<3400	3400	ug/kg
2-Nitrophenol	<680	680	ug/kg
4-Nitrophenol	<3400	3400	ug/kg
N-Nitrosodimethylamine	<680	680	ug/kg
P[illegible]hlorophenol	<3400	3400	ug/kg
[illegible]	<680	680	ug/kg
[illegible]-Trichlorophenol	<680	680	ug/kg
2,4,6-Trichlorophenol	<680	680	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	60.9	(35 - 114)
2-Fluorobiphenyl	81.1	(43 - 116)
p-Terphenyl-d14	127	(33 - 141)
2-Fluorophenol	40.6	(21 - 100)
Phenol-d6	50.9	(10 - 94)
2,4,6-Tribromophenol	98.8	(10 - 123)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

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Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-2	**QC Batch:**	000000	**Date Received:**	07/12/2000
EAG ID:	0007-00132-002	**Moisture (%)**	61	**Date Prepped:**	
				Date Analyzed:	07/12/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EA GROUP
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Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-2	**QC Batch:**	018379	**Date Received:**	07/12/2000
EAG ID:	0007-00132-002	**Moisture (%)**	61	**Date Prepped:**	07/17/2000
				Date Analyzed:	07/17/2000

Parameter	Result	Sample Reporting Limit	Units
N-Nitrosodiphenylamine	<1100	1100	ug/kg
Phenanthrene	750 J	1100	ug/kg
Pyrene	1100	1100	ug/kg
1,2,4-Trichlorobenzene	<1100	1100	ug/kg
4-Chloro-3-methylphenol	<1100	1100	ug/kg
2-Chlorophenol	<1100	1100	ug/kg
2-Methylphenol (o-Cresol)	<1100	1100	ug/kg
4-Methylphenol (p-Cresol)	<1100	1100	ug/kg
2,4-Dichlorophenol	<1100	1100	ug/kg
2,4-Dimethylphenol	<1100	1100	ug/kg
2,4-Dinitrophenol	<5700	5700	ug/kg
4,6-Dinitro-2-methylphenol	<5700	5700	ug/kg
2-Nitrophenol	<1100	1100	ug/kg
4-Nitrophenol	<5700	5700	ug/kg
N...rosodimethylamine	<1100	1100	ug/kg
...hlorophenol	<5700	5700	ug/kg
2,4,5-Trichlorophenol	<1100	1100	ug/kg
2,4,6-Trichlorophenol	<1100	1100	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	47.5	(35 - 114)
2-Fluorobiphenyl	101	(43 - 116)
p-Terphenyl-d14	MI	(33 - 141)
2-Fluorophenol	MI	(21 - 100)
Phenol-d6	16.1	(10 - 94)
2,4,6-Tribromophenol	73.4	(10 - 123)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

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Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-3	**QC Batch:**	000000	**Date Received:**	07/12/2000
EAG ID:	0007-00132-003	**Moisture (%)**	58	**Date Prepped:**	
				Date Analyzed:	07/12/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

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Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-3	**QC Batch:**	018354	**Date Received:**	07/12/2000
EAG ID:	0007-00132-003	**Moisture (%)**	58	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/16/2000

Parameter	Result	Sample Reporting Limit	Units
N-Nitrosodiphenylamine	<680	680	ug/kg
Phenanthrene	1600	680	ug/kg
Pyrene	640 J	680	ug/kg
1,2,4-Trichlorobenzene	<680	680	ug/kg
4-Chloro-3-methylphenol	<680	680	ug/kg
2-Chlorophenol	<680	680	ug/kg
2-Methylphenol (o-Cresol)	<680	680	ug/kg
4-Methylphenol (p-Cresol)	<680	680	ug/kg
2,4-Dichlorophenol	<680	680	ug/kg
2,4-Dimethylphenol	<680	680	ug/kg
2,4-Dinitrophenol	<3400	3400	ug/kg
4,6-Dinitro-2-methylphenol	<3400	3400	ug/kg
2-Nitrophenol	<680	680	ug/kg
4-Nitrophenol	<3400	3400	ug/kg
N [illegible]sodimethylamine	<680	680	ug/kg
[illegible]lorophenol	<3400	3400	ug/kg
[illegible]ol	<680	680	ug/kg
2,4,5-Trichlorophenol	<680	680	ug/kg
2,4,6-Trichlorophenol	<680	680	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	63.3	(35 - 114)
2-Fluorobiphenyl	85.6	(43 - 116)
p-Terphenyl-d14	126	(33 - 141)
2-Fluorophenol	35.4	(21 - 100)
Phenol-d6	38.7	(10 - 94)
2,4,6-Tribromophenol	98.3	(10 - 123)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

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Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-4	**QC Batch:**	000000	**Date Received:**	07/12/2000
EAG ID:	0007-00132-004	**Moisture (%)**	68	**Date Prepped:**	
				Date Analyzed:	07/12/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

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Laboratories

Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-4	**QC Batch:**	018354	**Date Received:**	07/12/2000
EAG ID:	0007-00132-004	**Moisture (%)**	68	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/16/2000

Parameter	Result	Sample Reporting Limit	Units
N-Nitrosodiphenylamine	<920	920	ug/kg
Phenanthrene	230 J	920	ug/kg
Pyrene	290 J	920	ug/kg
1,2,4-Trichlorobenzene	<920	920	ug/kg
4-Chloro-3-methylphenol	<920	920	ug/kg
2-Chlorophenol	<920	920	ug/kg
2-Methylphenol (o-Cresol)	<920	920	ug/kg
4-Methylphenol (p-Cresol)	<920	920	ug/kg
2,4-Dichlorophenol	<920	920	ug/kg
2,4-Dimethylphenol	<920	920	ug/kg
2,4-Dinitrophenol	<4600	4600	ug/kg
4,6-Dinitro-2-methylphenol	<4600	4600	ug/kg
2-Nitrophenol	<920	920	ug/kg
4-Nitrophenol	<4600	4600	ug/kg
N[illegible]rosodimethylamine	<920	920	ug/kg
[illegible]hlorophenol	<4600	4600	ug/kg
[illegible]nol	<920	920	ug/kg
2,4,5-Trichlorophenol	<920	920	ug/kg
2,4,6-Trichlorophenol	<920	920	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	45.0	(35 - 114)
2-Fluorobiphenyl	55.4	(43 - 116)
p-Terphenyl-d14	99.8	(33 - 141)
2-Fluorophenol	42.9	(21 - 100)
Phenol-d6	39.4	(10 - 94)
2,4,6-Tribromophenol	68.1	(10 - 123)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

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Workorder:	0007-00132	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SED-5	**QC Batch:**	018354	**Date Received:**	07/12/2000
EAG ID:	0007-00132-005	**Moisture (%)**	58	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/16/2000

Parameter	Result	Sample Reporting Limit	Units
N-Nitrosodiphenylamine	<700	700	ug/kg
Phenanthrene	160 J	700	ug/kg
Pyrene	200 J	700	ug/kg
1,2,4-Trichlorobenzene	<700	700	ug/kg
4-Chloro-3-methylphenol	<700	700	ug/kg
2-Chlorophenol	<700	700	ug/kg
2-Methylphenol (o-Cresol)	<700	700	ug/kg
4-Methylphenol (p-Cresol)	<700	700	ug/kg
2,4-Dichlorophenol	<700	700	ug/kg
2,4-Dimethylphenol	<700	700	ug/kg
2,4-Dinitrophenol	<3500	3500	ug/kg
4,6-Dinitro-2-methylphenol	<3500	3500	ug/kg
2-Nitrophenol	<700	700	ug/kg
4-Nitrophenol	<3500	3500	ug/kg
N-Nitrosodimethylamine	<700	700	ug/kg
chlorophenol	<3500	3500	ug/kg
[illegible]	<700	700	ug/kg
2,4,5-Trichlorophenol	<700	700	ug/kg
2,4,6-Trichlorophenol	<700	700	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	50.4	(35 - 114)
2-Fluorobiphenyl	64.7	(43 - 116)
p-Terphenyl-d14	123	(33 - 141)
2-Fluorophenol	36.0	(21 - 100)
Phenol-d6	36.6	(10 - 94)
2,4,6-Tribromophenol	69.7	(10 - 123)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

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QUALITY CONTROL SUMMARY

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SVOC Method Blank QC Report

EAG ID: MB **Matrix:** Soil
Analysis Date:7/14/00 **QC Batch:** 18354
Method:SW-846 8260A
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter		Reporting	
SVOC 8270	Result	Limits	Units
4-Chloro-3-methylphenol	<6.0	6.0	ug/kg
2-Chlorophenol	<6.0	6.0	ug/kg
2-Methylphenol (o-Cresol	<6.0	6.0	ug/kg
4-Methylphenol (p-Cresol	<6.0	6.0	ug/kg
2,4- Dichlorophenol	<6.0	6.0	ug/kg
2,4- Dimethylphenol	<6.0	6.0	ug/kg
2,4- Dinitrophenol	<30	30	ug/kg
4,6- Dinitro-2-methylphenol	<30	30	ug/kg
2-Nitrophenol	<6.0	6.0	ug/kg
4-Nitrophenol	<30	30	ug/kg
N-Nitrosodimethylamine	<6.0	6.0	ug/kg
Pentachlorophenol	<30	30	ug/kg
Phenol	<6.0	6.0	ug/kg
2,4,5- Trichlorophenol	<6.0	6.0	ug/kg
2,4,6- Trichlorophenol	<6.0	6.0	ug/kg

Surrogate	Percent Recovery	Control Limits
Nitrobenzene-d5	77.84	(35 - 114)
2-Fluorobiphenyl	86.55	(43 - 116)
p-Terphenyl-d14	86.07	(33 - 141)
2-Fluorophenol	53.68	(21 - 100)
Phenol-d6	61.58	(10 - 94)
2,4,6- Tribromophenol	81.05	(10 - 123)

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Metals Method Blank QC Report

EAG ID: MB **Matrix: Soil**
Analysis Date: 7/17/00
Method:SW846-6010A
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter	Result	Reporting Limit	Units	Date Prep/Analyzed
Arsenic: SW846-6010A	<25	25	mg/kg	7/13/00-7/17/00
Barium: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Cadmium: SW846-6010	<5	5.0	mg/kg	7/13/00-7/17/00
Chromium: SW846-6010	<5	5.0	mg/kg	7/13/00-7/17/00
Copper: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Lead: SW846-6010A	<10	10.0	mg/kg	7/13/00-7/17/00
Nickel: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Selenium: SW846-6010	<25	25	mg/kg	7/13/00-7/17/00
Silver: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Zinc: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00

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Metals Method Blank QC Report

EAG ID: MB **Matrix:** TCLP
Analysis Date: 7/18/00
Method:SW846-6010A
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter	Result	Reporting Limit	Units	Date Prep/Analyzed
Arsenic: SW846-6010A	<0.10	0.10	mg/liter	7/14/00-7/18/00
Barium: SW846-6010A	<0.10	0.10	mg/liter	7/14/00-7/18/00
Cadmium: SW846-6010	<0.10	0.10	mg/liter	7/14/00-7/18/00
Chromium: SW846-6010	<0.10	0.10	mg/liter	7/14/00-7/18/00
Copper: SW846-6010A	<0.10	0.10	mg/liter	7/14/00-7/18/00
Lead: SW846-6010A	<0.10	0.10	mg/liter	7/14/00-7/18/00
Nickel: SW846-6010A	<0.05	0.05	mg/liter	7/14/00-7/18/00
Selenium: SW846-6010	<0.10	0.10	mg/liter	7/14/00-7/18/00
Silver: SW846-6010A	<0.10	0.10	mg/liter	7/14/00-7/18/00
Zinc: SW846-6010A	<0.10	0.10	mg/liter	7/14/00-7/18/00

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Laboratories

TOC Method Blank QC Report

EAG ID: MB **Matrix: Soil**
Analysis Date: 07/14/00 **QC Batch: 6967**
Method:9060M
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter	Result	Reporting Limits	Units
TOC 9060M			
TOC	<1000	1000	mg/kg

EA GROUP
Laboratories

TPH-DRO LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS
Analysis Date: 7/19/00
Method:SW846-8015M
Matrix: Soil
QC Batch: 18381
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	RPD	RPD Control Limits
TPH SW846-8015M					
TPH DRO	62.7	85	30-130	4%	0-20

Surrogate	Percent Recovery	Percent Recovery	Control Limits	RPD	RPD Control Limits
C-30	88.4	95.3	80-120	8%	0-20

EA GROUP
Laboratories

Metals LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS/ LCSDUP **Matrix:** Soil
Analysis Date: 7/14/00
Method:SW846-7471
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter	LCS Percent Recovery	LCSDUP Percent Recovery	Control Limits	RPD	RPD Control Limits	Date Prep/Analyzed
Mercury: SW846-7471	101.5	99	80-120	2%	0-20	7/14/00-7/14/00

EA GROUP
Laboratories

Metals LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS/ LCSDUP **Matrix:** TCLP
Analysis Date: 7/14/00
Method:SW846-7471
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter	LCS Percent Recovery	LCSDUP Percent Recovery	Control Limits	RPD	RPD Control Limits	Date Prep/Analyzed
Mercury: SW846-7471	92.5	97.3	80-120	5%	0-20	7/14/00-7/14/00

EAGROUP
Laboratories

SVOC MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) REPORT

EAG ID: 0007-00132-002 Matrix: Soil
Analysis Date: 07/15/00 QC Batch: 18354
Method:SW-846 8270
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter SVOC 8270	MS Percent Recovery	MSD Percent Recovery	Control Limits Limits	RPD	RPD Control Limits
Phenol	51	42	5-112	19%	0-20
2-Chlorophenol	56	44	23-134	24%	0-20
1,4-Dichlorobenzene	55	43	20-124	24%	0-20
N-Nitrosodiphenylamine	67	59	0-230	13%	0-20
1,2,4- Trichlorobenzene	67	59	44-142	13%	0-20
4-Chloro-3-methylphenol	70	66	22-147	6%	0-20
Acenaphthene	80	76	47-145	5%	0-20
2,4- Dinitrotoluene	54	59	39-139	9%	0-20
4-Nitrophenol	35	35	0-132	0%	0-20
Pentachlorophenol	71	75	14-176	5%	0-20
Pyrene	54	52	52-115	4%	0-20

Surrogate	MS Percent Recovery	MSD Percent Recovery	Control Limits	RPD	RPD Control Limits
Nitrobenzene-d5	59	45.95	(35 - 114)	25%	0-20
2-Fluorobiphenyl	DIL	DIL	(43 - 116)	NA	0-20
p-Terphenyl-d14	DIL	DIL	(33 - 141)	NA	0-20
2-Fluorophenol	27.81	29.88	(21 - 100)	7%	0-20
Phenol-d6	39.38	40.68	(10 - 94)	3%	0-20
2,4,6- Tribromophenol	98.91	113.64	(10 - 123)	14%	0-20

EA GROUP
Laboratories

METALS MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) REPORT

EAG ID: 0007-00137-001 **Matrix:** Soil
Analysis Date: 7/17/00
Method: SW846-6010A
Associated Samples: 0007-00132-001, 002, 003, 004, 005

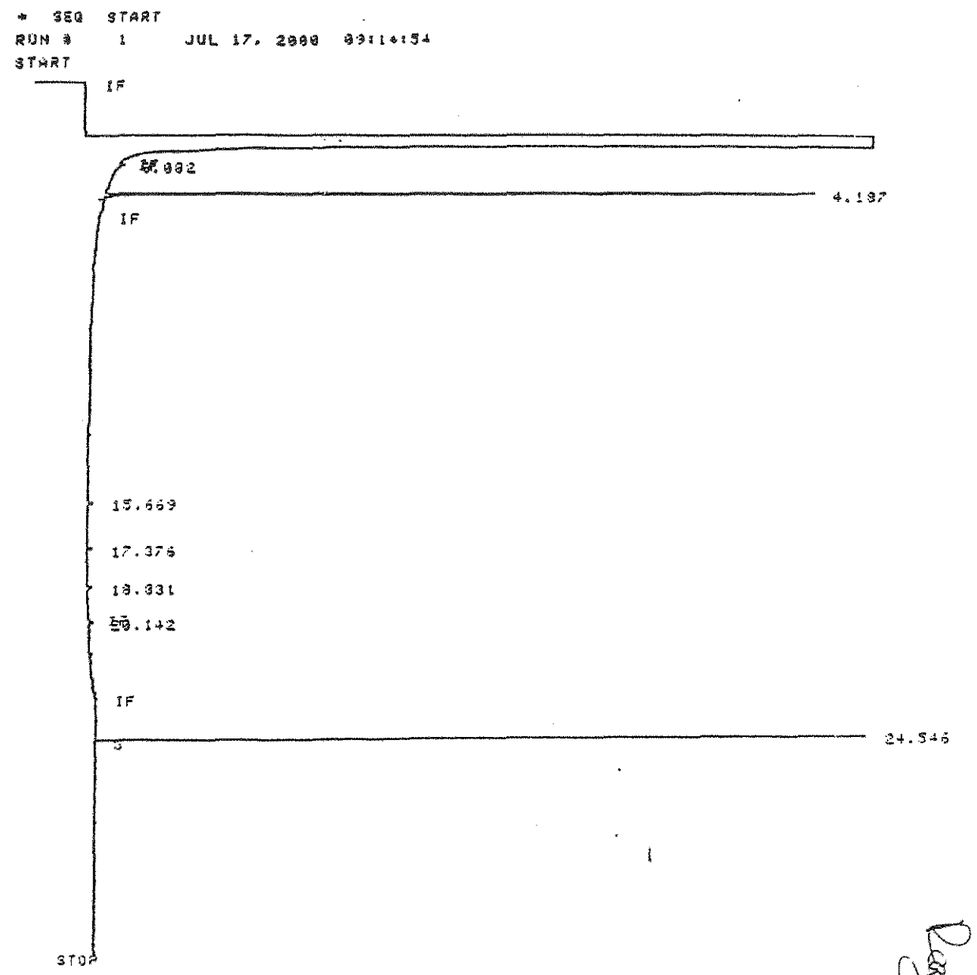
Parameter	MS Percent Recovery	MSD Percent Recovery	Control Limits	RPD	RPD Control Limits	Date Prep/Analyzed
Arsenic: SW846-6010A	67.0	68.5	80-120	2%	0-20	7/13/00-7/17/00
Barium: SW846-6010A	66.6	70.4	80-120	6%	0-20	7/13/00-7/17/00
Cadmium: SW846-6010	58.2	60.3	80-120	4%	0-20	7/13/00-7/17/00
Chromium: SW846-6010	61.7	63.9	80-120	4%	0-20	7/13/00-7/17/00
Copper: SW846-6010A	68.5	70.7	80-120	3%	0-20	7/13/00-7/17/00
Lead: SW846-6010A	61.6	61.9	80-120	0%	0-20	7/13/00-7/17/00
Nickel: SW846-6010A	63.8	65.3	80-120	2%	0-20	7/13/00-7/17/00
Selenium: SW846-6010	59.8	54.7	80-120	9%	0-20	7/13/00-7/17/00
Silver: SW846-6010A	34.8	45.6	80-120	27%	0-20	7/13/00-7/17/00
Zinc: SW846-6010A	69.9	70.8	80-120	1%	0-20	7/13/00-7/17/00

EA GROUP
Laboratories

TOC SAMPLE/SAMPLE DUPLICATE REPORT

EAG ID: Sample/Sample Dup **Matrix:** Soil
Analysis Date: 07/14/00 **QC Batch:** 6967
Method:9060M
Associated Samples: 0007-00132-001, 002, 003, 004, 005

Parameter	Sample Recovery	Sample Duplicate Recovery	RPD	Control Limits
TOC 9060M				
TOC	<1000	<1000	0%	80-120



RUN# 1 JUL 17, 2009 09:14:54

SAMPLE NAME: REAG BLK SAMPLE# 1
METHOD NAME: M-CROMH.MET
NECL2

NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
3.082	4724	BP	.079	.44085
4.187	268896	PP	.023	25.09401
14.000	11182	VV	.058	1.04353
24.546	786753	BP3	.004	73.42162

Reagent Blank 7/17

RUN# 3 JUL 17, 2000 10:46:41

SAMPLE NAME: CALCHECK SAMPLE# 3
METHOD NAME: M-DROMH.MET
MOTOR OIL

NO CALIB PEAKS FOUND
AREA

17.8 min : 1000 µg/ml MOTOR OIL

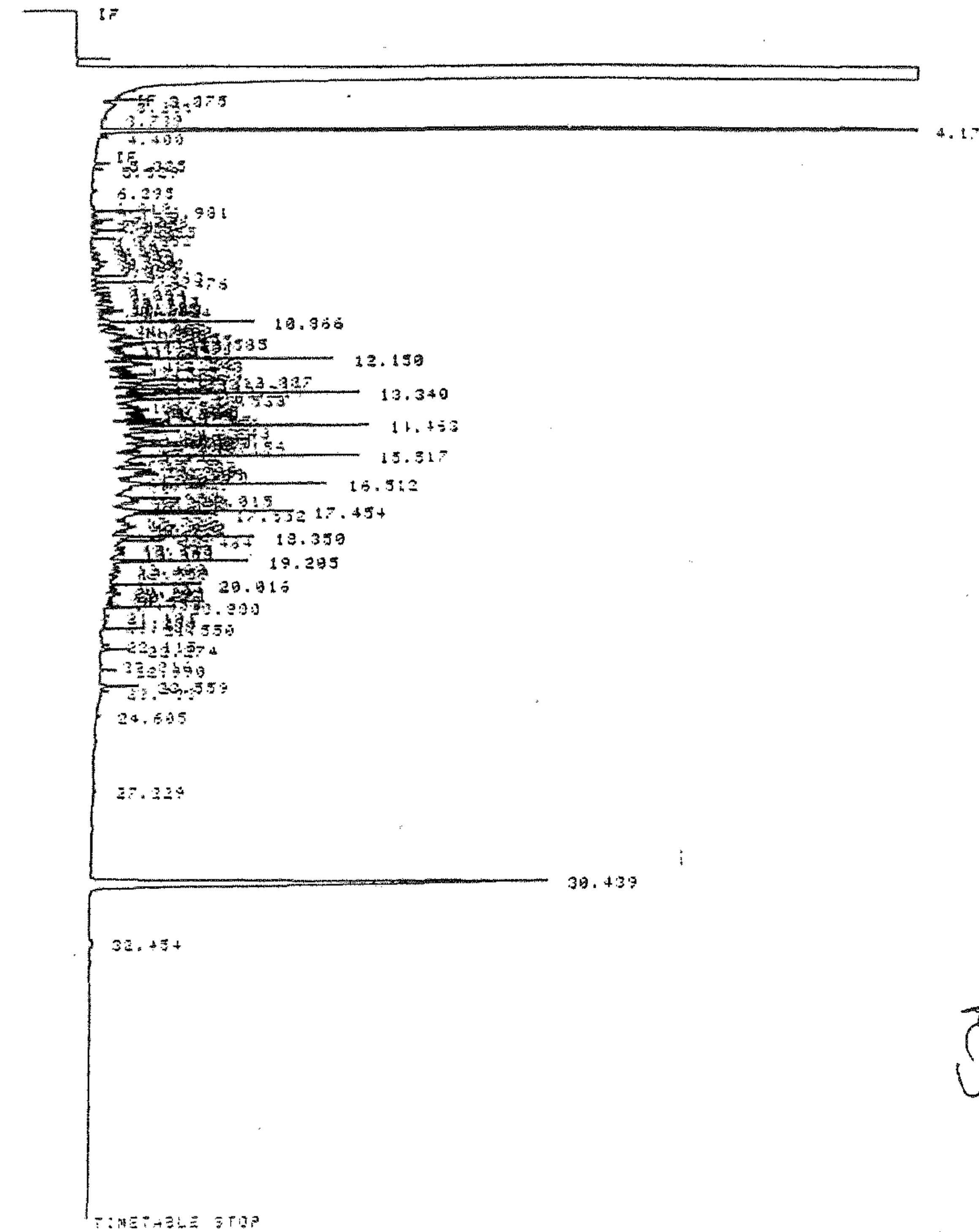
MOTOR OIL CAL CHECK
7/17

01286

01289

RUN # 5 JUL 17, 2000 12:38:51

START



RUN# 5 JUL 17, 2000 12:38:51

SAMPLE NAME: [illegible] SAMPLE# 3

METHOD NAME: [illegible]

RUN# 2 JUL 19, 2000 10:21:00

SAMPLE NAME: REAG BLK SAMPLE# 1
METHOD NAME: M*DROMH.MET
MECL2

NO CALIB PEAKS FOUND
AREA=

RT	AREA TYPE	[illegible]	[illegible]
4.284	[illegible]	PB	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

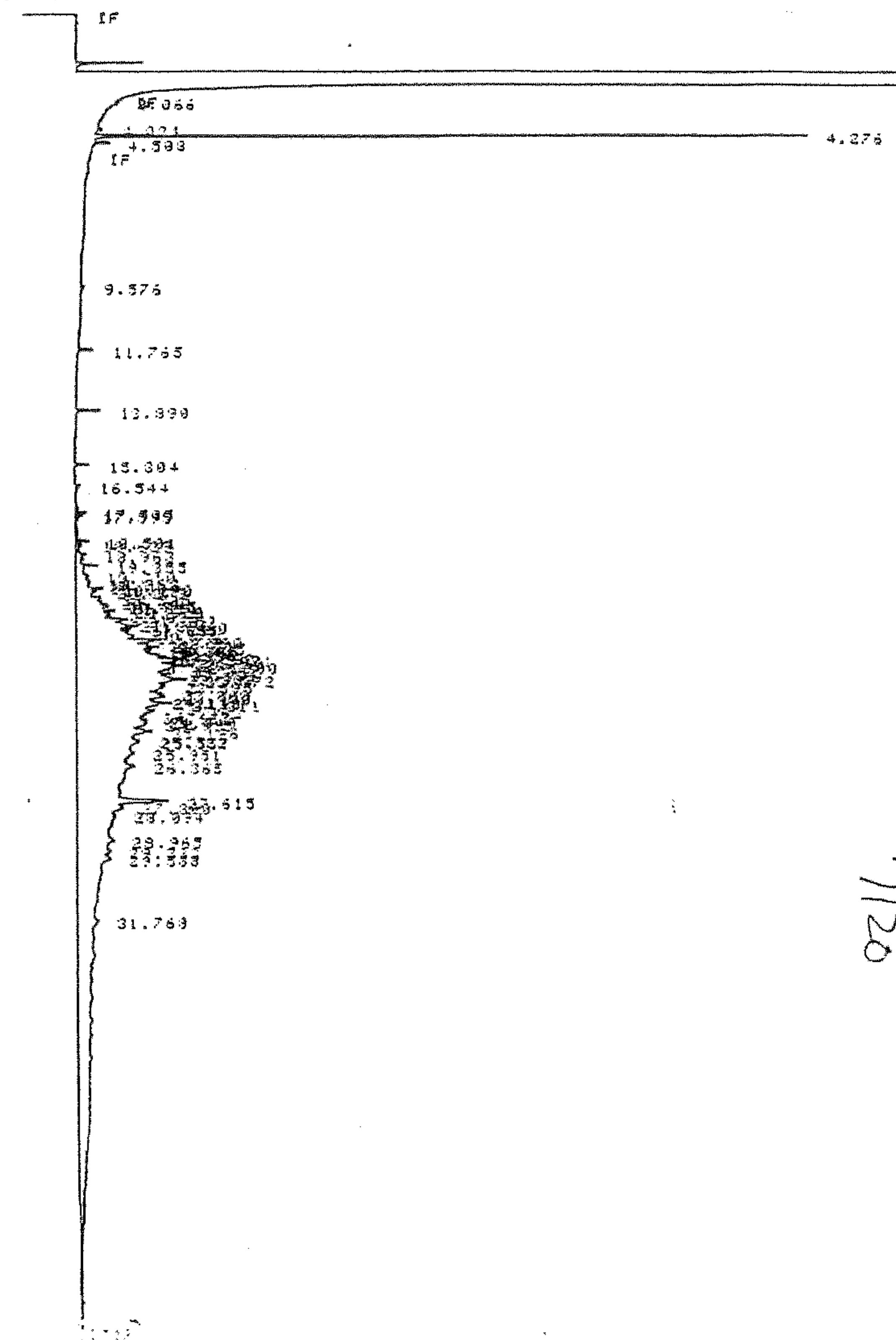
Reagent Blank 7/20

01372

OF SAMPLE WASHES = 7   CLEAN

* SEQ START
STOP
ABORTED

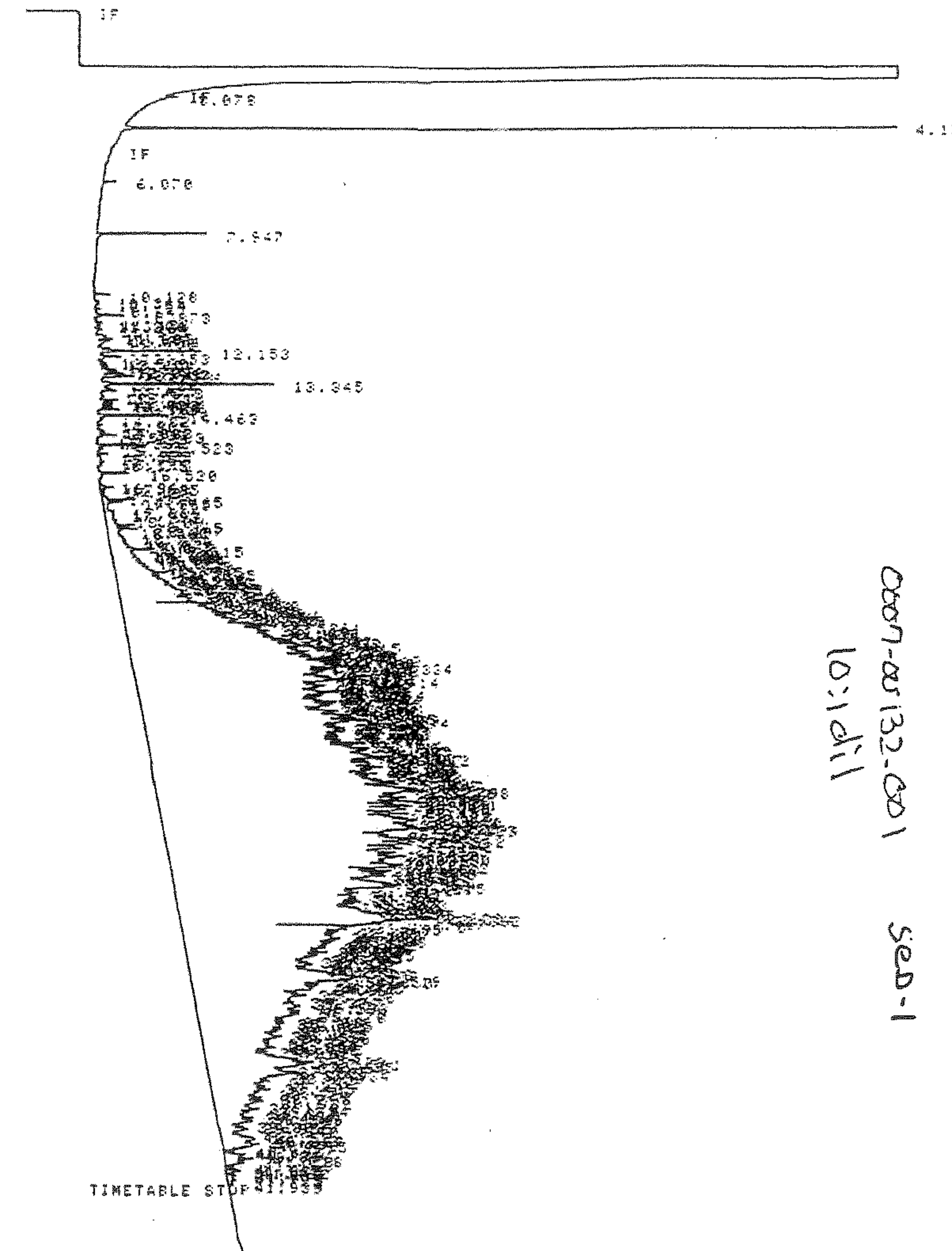
* SEQ START
Waiting for system readiness
RUN # 4   JUL 19, 2000 12:11:23
START



MOTOR OIL CAL Check 7/20

01379

RUN # 6 JUL 17, 2000 13:35:20
START



C007-00132-001 SED-1
10:1 dil

01291

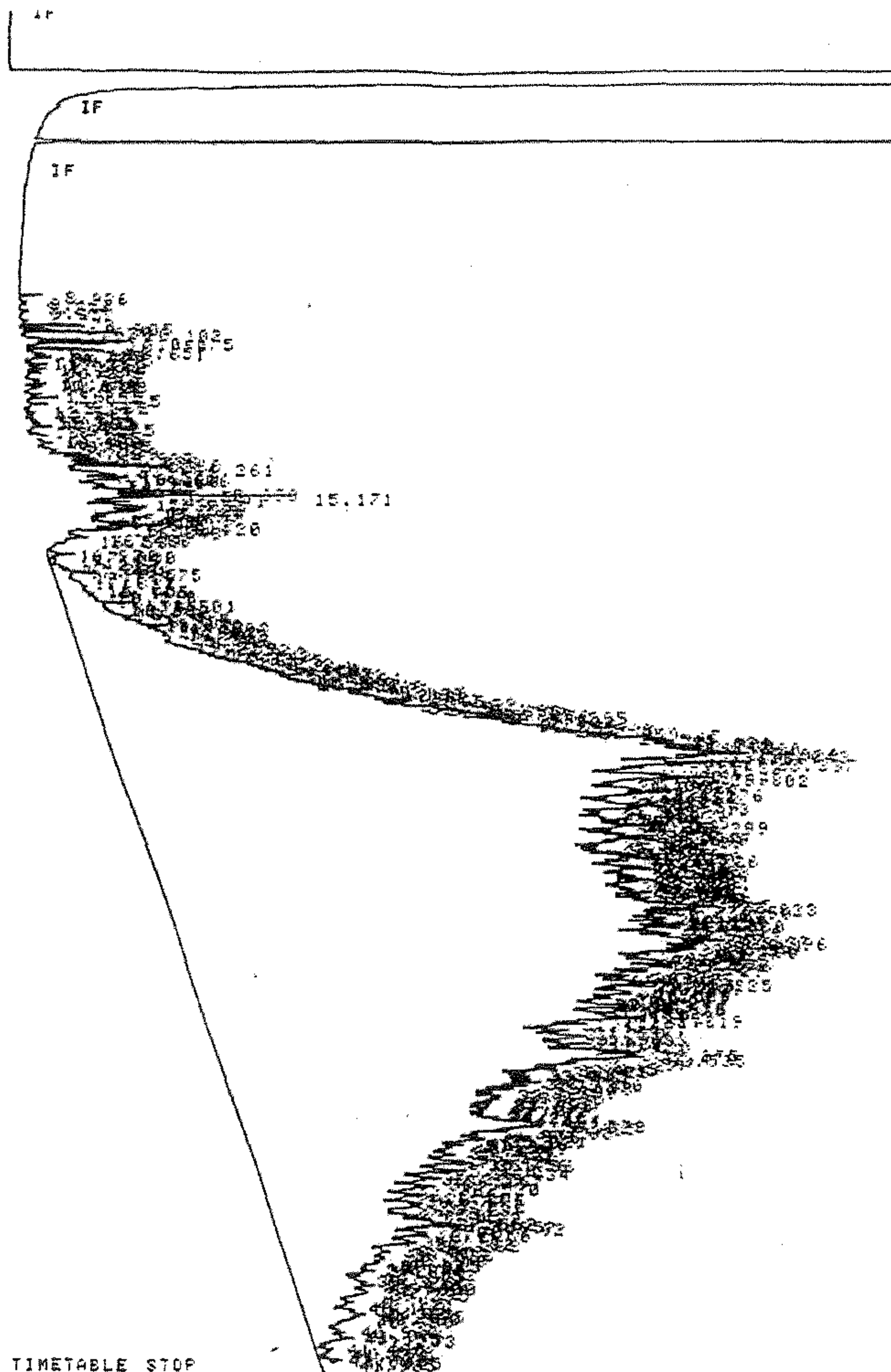
RUN# 6 JUL 17, 2000 13:35:20

Motor oil = 37 mm
= 2079 µg/ml

SAMPLE NAME: 132-01 SAMPLE# 6
METHOD NAME: H+DROMH.MET
10:1 dil

ESTD-AREA

RT	AREA TYPE	CAL#	AMOUNT
3.075	-.40 BP		.329
[illegible]	[illegible]		[illegible]



01301

0007-00132-003 Seq-3
10:1 dil

RUN# 8 JUL 17, 2000 15:28:02

MOTOR OIL: 94.4mm = 5300 ug/ul

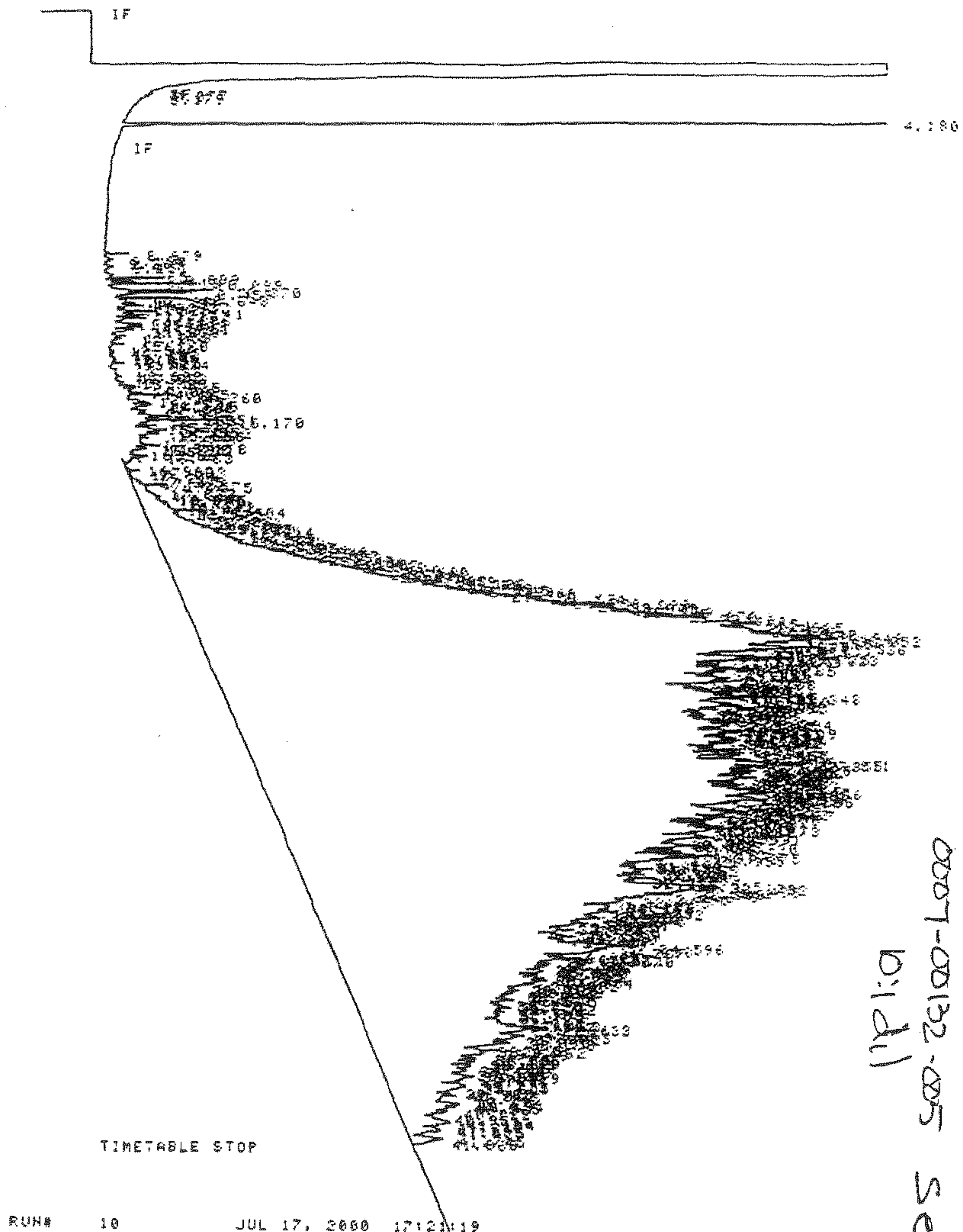
SAMPLE NAME: 132-03 SAMPLE# 8
METHOD NAME: M*DROMH.MET

ESTD-AREA 10:1 dil

RT	AREA	TYPE	CAL#	AMOUNT
4.190	441417	PP		.000
14.000	14343840	++		.000
23.020	421714	HH		.000
23.843	[illegible]	HH		.000
[illegible]	[illegible]	+		.000

RUN # 10 JUL 17, 2000 17:21:19

START



01311

0007-00132-005 Seg-5

10:1 dil

TIMETABLE STOP

RUN# 10 JUL 17, 2000 17:21:19

SAMPLE NAME: 132-05 SAMPLE# 10

METHOD NAME: M*DROMH.MET

10:1 dil

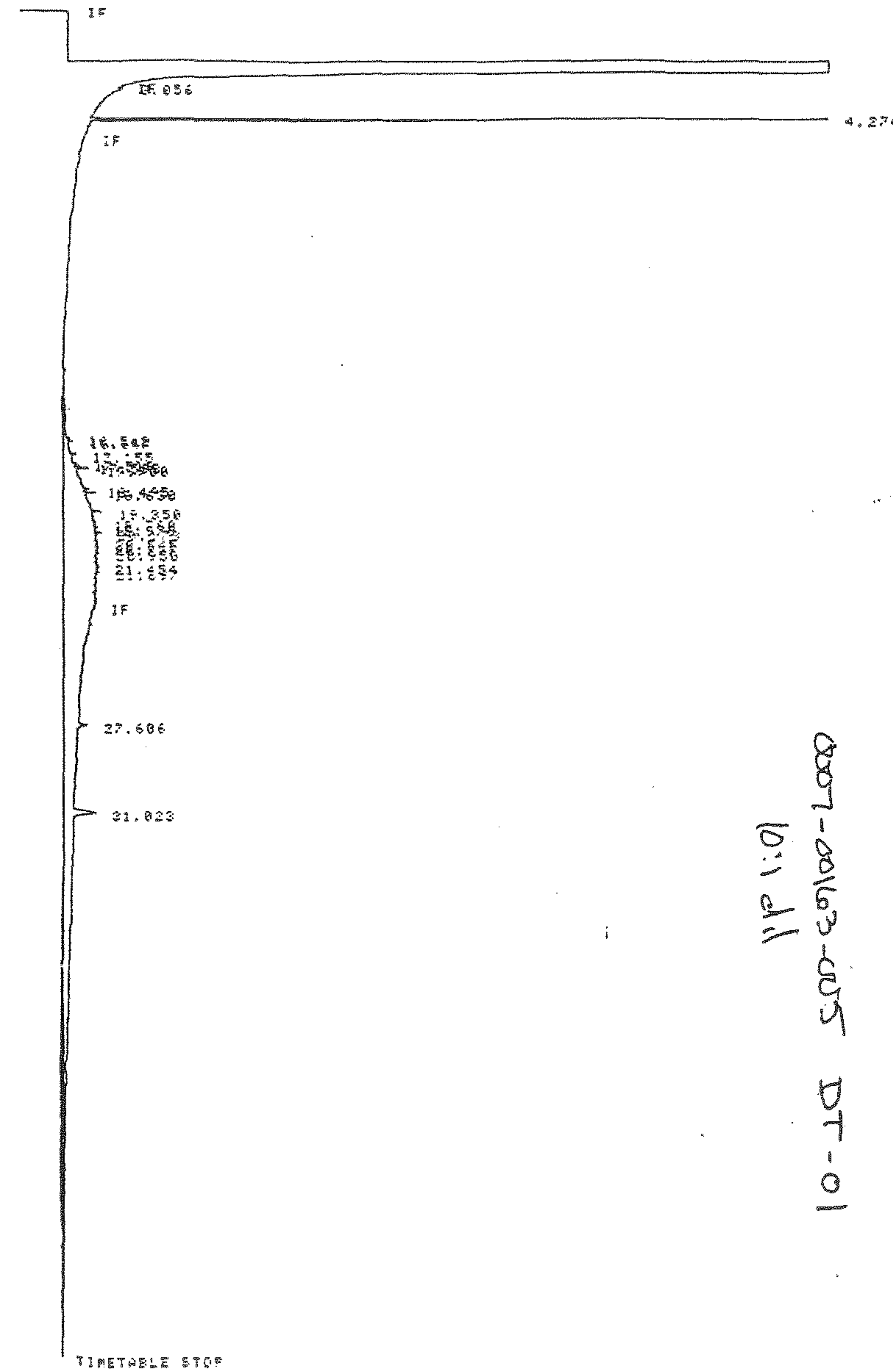
ESTD-AREA

Motor oil: 115 min = 6460 mg/kg

RT	AREA	TYPE	CAL#	AMOUNT
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]

0007-00137-002 WWTA-02
10:1 dil

01384



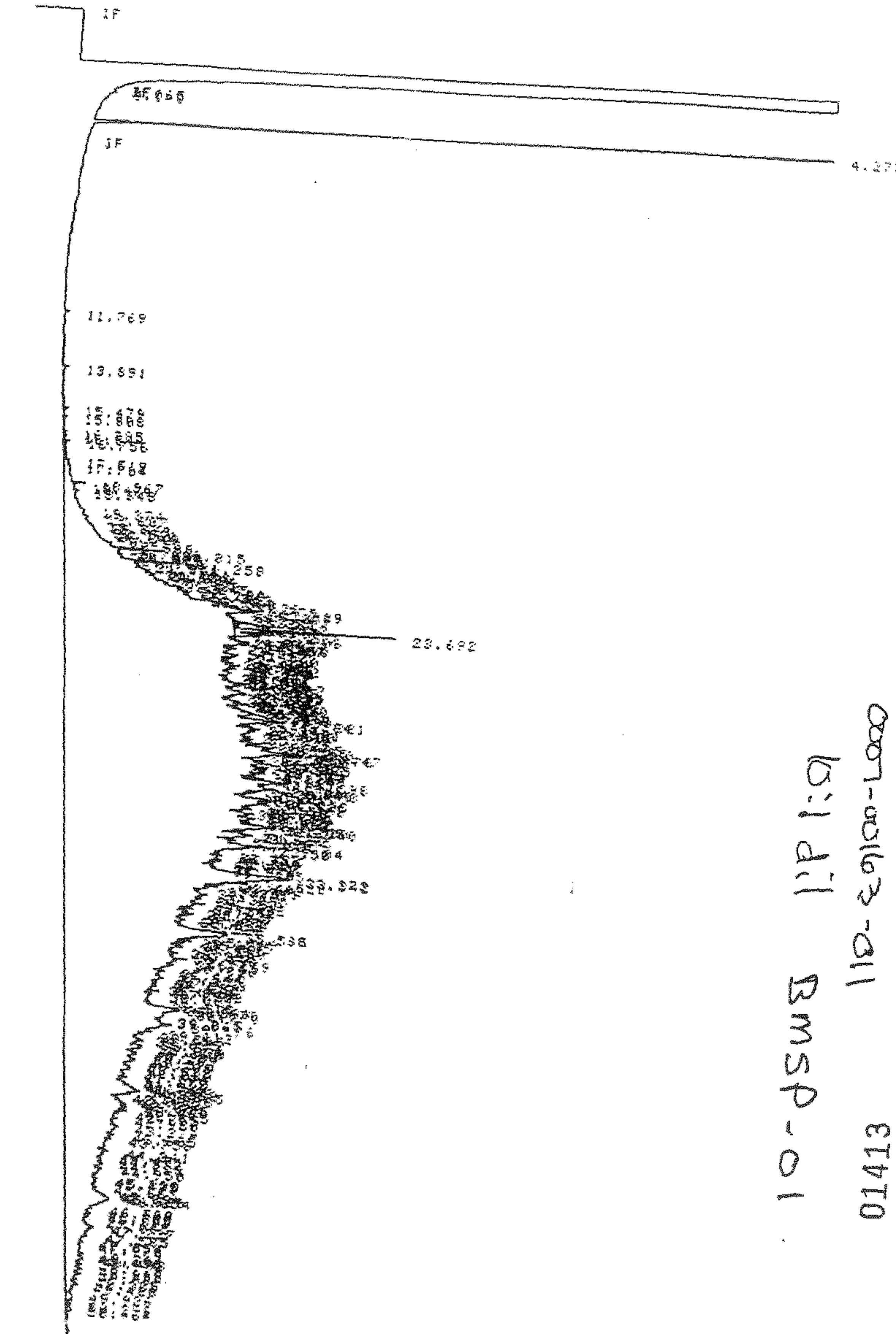
0007-00163-005 DT-01
1p 1:01

01387

0207-00163-007 RMSP-01 Native
Apr 1:01

01421

Waiting for system readiness
Run # 19 JUL 26, 2000 03:31:34
START



0007-00163-011 10:1 dil BMSP-01

01413

EA GROUP
Laboratories

CHAIN OF CUSTODY

EA GROUP
7118 INDUSTRIAL PARK BLVD. MENTOR, OHIO 44060-5314
(440) 951-3514 FAX (440) 951-3774 (800) 875-3514
website: www.eagroup-ohio.com customerservice@eagroup-ohio.com

CHAIN OF CUSTODY

PLEASE DO NOT SEPARATE FORMS

EAG WORK ORDER # ______ (INDUSTRIAL)

PAGE 1 OF ___

Company Name: Hart Crowser
Report Address: 1910 Fairview East
City: Seattle State: WA Zip: 98102
Billing Address:
City: State: Zip:
Phone: 206 328-9530 Fax: 206 328-5581
Report Attention: Will Abercrombie
Project Name: ASW # 7398-01
P.O. #

TURNAROUND (✓)
RUSH ✓
REPORT BY FAX AS AVAILABLE DEADLINE 7/14/00
NORMAL ____

RESULTS (✓)
MAIL ✓
FAX ✓

ANALYSIS REQUESTED

SEE REVERSE FOR HOLD TIME RESTRICTIONS

SAMPLE IDENTIFICATION	MATRIX	COLLECTION TIME	COLLECTION DATE	TPH - GRO - 8015 Mod.	TPH - DRO - 8015 Mod.	BTEX 8260	VOC 8260	SVOCs 8270	PAHs - 8270	TCLS - 9060 Mod.	Metals - [illegible]	[illegible]	TPH - [illegible]	Hold	SAMPLE REMARKS: CONDITION, ETC....
SED-1	Sediment		7.12.00		X			X		X	X		X	X	
SED-2	↓		↓		X			X		X	X			X	
SED-3	↓		↓		X			X		X	X			X	
SED-4	↓		↓		X			X		X	X		X	X	
SED-5	↓		↓		X			X		X	X		X	X	

Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time
[signature]	7/12/00 12:30	[signature]	7/12/00 12 [illegible]
[signature]	7/14/00 14:45	[signature]	7/15/00 2:45 [illegible]

Additional Comments:
Data to be faxed upon completion as available
Final report due 7/19/00 EOD
Electronic deliverables in Excel

WHITE - FILE YELLOW - INVOICE PINK - REPORT GREEN - CUSTOMER

EA GROUP
Laboratories

AFFIDAVIT

EA Group (VAP Laboratory No. CL0015)

STATE OF OHIO

COUNTY OF LAKE

I, Patrick Herbert, being first duly sworn according to law deposes and states that, to the best of my knowledge, information and belief:

1) I am an adult over the age of eighteen (18) years old and competent to testify herein.

2) I was employed by **EA Group** as **President** and was authorized to submit this affidavit on behalf of **EA Group** for the attached report.

3) **EA Group** or it's VAP certified subcontract laboratory performed analysis for **Hart Crowser** concerning a voluntary action for the property located at: **ASW #7398-01.**

4) **EA Group** or it's subcontract laboratory was a certified laboratory pursuant to Ohio Revised Code (ORC) Chapter 3746 and Ohio Administrative Code (OAC) Chapter 3745-300 when it performed the analysis for the purposes of conducting or completing the voluntary action.

5) All of the analyses performed by **EA Group**, or it's subcontract laboratory, for the purposes of conducting or completing the voluntary action at the referenced property, complied with the applicable requirements of ORC Chapter 3746 and rules adopted under OAC 3745-300.

6) The information, data, documents and reports provided for the purposes of conduction or completing the voluntary action at the referenced property are identified in the attachment(s) hereto as **0007-00137.**

7) All information, data, documents and reports submitted by **EA Group**, identified in the attachment(s) of this affidavit and submitted for the purposes of conduction or completing this voluntary action are the true, accurate and complete reporting of the results of analysis.

8) **EA Group** has no conflict of interest, as set forth in OAC rules 3745-300-04(I) and 3745-300-05(F)(3), in performing the analysis for **Hart Crowser** for the referenced property.

Patrick Herbert

Further affiant sayeth naught

President
Affiant Signature

Sworn to me this 21st day of July

EUGENE REILLY Eugene Reilly
Notary
COMMISSION EXPIRES 2/20/01

EA GROUP
Laboratories

Project Summary

The following analytical report contains the results as requested for samples submitted to EA Group. The results included in this report have been reviewed for compliance with the analytical methods indicated in this report. All data have been found to be compliant with accepted laboratory protocol. Exceptions, if any, are noted below. Analytes appearing in bold type were analyzed at a subcontract facility.

Data Interpretation

For assistance with report interpretation or questions regarding regulatory limits, please contact Client Services at 440-951-3514 or customerservice@eagroup-ohio.com.

Sample Summary

Sample Receive Date: 7/12/00

EAG Sample Identification	Client Sample Identification	EAG Sample Identification	Client Sample Identification
000700137 - 001	WWTA-01	000700137 - 002	WWTA-02
000700137 - 003	WWTA-03	000700137 - 004	WWTA-04
000700137 - 005	~~SASA~~-01 SALA	000700137 - 006	~~SASA~~-02 SALA

7/24/00 JHL

Quality Control Narrative

"J" qualifier indicates estimated results, the value reported is below the standard laboratory reporting limit.

**HOLD A portion of sample is on "HOLD", as per client request.

"MI" in the analytical report indicates that due to inherent matrix interference the spiked concentration could not be quantitated.

"Dil" in the analytical report indicates that due to matrix interference or high analyte concentration, a dilution was required and the spiked concentration could not be quantitated.

MS and MSD were outside of statistical advisory limits for As, Ba, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn due to matrix interference.

The Relative Percent Difference (RPD) for the MS/MSD pair for Ag was outside of statistical advisory limits due to matrix interference.

The Relative Percent Difference (RPD) for the LCS/LCSD pair for PAH compound N-Nitrosodiphenylamine on QC batch 18349 was outside statistical advisory limits. The analytical data was reported based on other supporting quality control information.

The Relative Percent Difference (RPD) for the MS/MSD pair for PAH compounds N-Nitrosodiphenylamine ans 2-Chlorophenol on QC batch 18349 was outside statistical advisory limits due to matrix interference.

The Relative Percent Difference (RPD) for surrogate Nitrobenzene-d5 for the LCS/MSD pair in PAH QC batch 18349 was outside statistical advisory limits due to matrix interference.

EA GROUP
Laboratories

ANALYTICAL RESULTS

Workorder: 0007-00137

EA GROUP
Laboratories

EAG ID: 0007-00137-4 Client ID: WWTA-04 Sampled: 7/12/2000 Received: 7/12/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Arsenic: SW846-6010A	<45 J	45	mg/kg	7/13/2000	7/17/2000
Barium: SW846-6010A	150	8.9	mg/kg	7/13/2000	7/17/2000
Cadmium: SW846-6010A	<8.9	8.9	mg/kg	7/13/2000	7/17/2000
Chromium: SW846-6010A	<8.9	8.9	mg/kg	7/13/2000	7/17/2000
Copper: SW846-6010A	12	8.9	mg/kg	7/13/2000	7/17/2000
Lead: SW846-6010A	<18	18	mg/kg	7/13/2000	7/17/2000
Mercury, SW846-7471	<0.15	0.15	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	<8.9 J	8.9	mg/kg	7/13/2000	7/17/2000
Selenium: SW846-6010A	<45	45	mg/kg	7/13/2000	7/17/2000
Silver: SW846-6010A	<8.9	8.9	mg/kg	7/13/2000	7/17/2000
SW846-6010A	<8.9	8.9	mg/kg	7/13/2000	7/17/2000

EAG ID: 0007-00137-5 Client ID: ~~SASA-01~~ SALA Sampled: 7/12/2000 Received: 7/12/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Arsenic: SW846-6010A	<30 J	30	mg/kg	7/13/2000	7/17/2000
Barium: SW846-6010A	180	6.0	mg/kg	7/13/2000	7/17/2000
Cadmium: SW846-6010A	<6.0	6.0	mg/kg	7/13/2000	7/17/2000
Chromium: SW846-6010A	14	6.0	mg/kg	7/13/2000	7/17/2000
Copper: SW846-6010A	13	6.0	mg/kg	7/13/2000	7/17/2000
Lead: SW846-6010A	44	12	mg/kg	7/13/2000	7/17/2000
Mercury, SW846-7471	<0.10	0.10	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	7.0 J	6.0	mg/kg	7/13/2000	7/17/2000
Selenium: SW846-6010A	<30	30	mg/kg	7/13/2000	7/17/2000
Silver: SW846-6010A	<6.0	6.0	mg/kg	7/13/2000	7/17/2000
Zinc: SW846-6010A	71	6.0	mg/kg	7/13/2000	7/17/2000

7/24/00 JH

EA GROUP
Laboratories

Workorder:	0007-00137	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	WWTA-01	**QC Batch:**	000000	**Date Received:**	07/12/2000
EAG ID:	0007-00137-001	**Moisture (%)**	12	**Date Prepped:**	
				Date Analyzed:	07/12/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EAGROUP
Laboratories

Workorder:	0007-00137	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	WWTA-01	**QC Batch:**	018381	**Date Received:**	07/12/2000
EAG ID:	0007-00137-001	**Moisture (%)**	12	**Date Prepped:**	07/17/2000
				Date Analyzed:	07/19/2000

Parameter	Result	Sample Reporting Limit	Units
Total Petroleum Hydrocarbons			
Extractable Petroleum Hydrocarbons; C10-C20	<12	12	mg/kg
Extractable Petroleum Hydrocarbons; C16-C34	36	12	mg/kg
Total Extractables	36	12	mg/kg

Surrogate	Percent Recovery	Recovery Limits
Tricontane	75.6	(30 - 130)

EA GROUP
Laboratories

Workorder:	0007-00137	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	WWTA-02	**QC Batch:**	018326	**Date Received:**	07/12/2000
EAG ID:	0007-00137-002	**Moisture (%)**	46	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/16/2000

Parameter	Result	Sample Reporting Limit	Units
Semivolatile Organic Compounds: SW846-8270B			
Acenaphthene	<550	550	ug/kg
Acenaphthylene	<550	550	ug/kg
Anthracene	<550	550	ug/kg
Benzo(a)anthracene	130 J	550	ug/kg
Benzo(a)pyrene	120 J	550	ug/kg
Benzo(b)fluoranthene	230 J	550	ug/kg
Benzo(g,h,i)perylene	<550	550	ug/kg
Benzo(k)fluoranthene	93 J	550	ug/kg
Chrysene	210 J	550	ug/kg
Dibenz[a,h]anthracene	<550	550	ug/kg
Fluoranthene	410 J	550	ug/kg
Fluorene	<550	550	ug/kg
Indeno[1,2,3-cd]pyrene	<550	550	ug/kg
Naphthalene	<550	550	ug/kg
nthrene	260 J	550	ug/kg
	270 J	550	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	44.5	(35 - 114)
2-Fluorobiphenyl	50.0	(43 - 116)
p-Terphenyl-d14	70.1	(33 - 141)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

EA GROUP
Laboratories

Workorder:	0007-00137	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	WWTA-03	**QC Batch:**	018381	**Date Received:**	07/12/2000
EAG ID:	0007-00137-003	**Moisture (%)**	10	**Date Prepped:**	07/19/2000
				Date Analyzed:	07/19/2000

Parameter	Result	Sample Reporting Limit	Units
Total Petroleum Hydrocarbons			
Extractable Petroleum Hydrocarbons; C10-C20	<12	12	mg/kg
Extractable Petroleum Hydrocarbons; C16-C34	25	12	mg/kg
Total Extractables	25	12	mg/kg

Surrogate	Percent Recovery	Recovery Limits
Tricontane	83.2	(30 - 130)

EA GROUP
Laboratories

Workorder:	0007-00137	**Matrix:**	Solid	**Date Sampled:**	07/12/2000
Client ID:	SA8A-02	**QC Batch:**	000000	**Date Received:**	07/12/2000
EAG ID:	0007-00137-006	**Moisture (%)**	11	**Date Prepped:**	
				Date Analyzed:	07/12/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EAGROUP
Laboratories

PAH Method Blank QC Report

EAG ID: MB **Matrix:** Soil
Analysis Date: 07/14/00 **QC Batch:** 18326
Method:SW-846 8270
Associated Samples: 0007-00137-001, 002

Parameter PAH 8270	Result	Reporting Limits	Units
Acenapthene	<6.0	6.0	ug/kg
Acenaphthylene	<6.0	6.0	ug/kg
Anthracene	<6.0	6.0	ug/kg
Benzo(a)anthracene	<6.0	6.0	ug/kg
Benzo(a)pyrene	<6.0	6.0	ug/kg
Benzo(b)fluoranthene	<6.0	6.0	ug/kg
Benzo(g,h,I)perylene	<6.0	6.0	ug/kg
Benzo(k)fluoranthene	<6.0	6.0	ug/kg
Chrysene	<6.0	6.0	ug/kg
Dibenz(a,h)anthracene	<6.0	6.0	ug/kg
Fluoranthene	<6.0	6.0	ug/kg
Fluorene	<6.0	6.0	ug/kg
Ideno(1,2,3-cd)pyrene	<6.0	6.0	ug/kg
Napthalene	<6.0	6.0	ug/kg
Phenanthrene	<6.0	6.0	ug/kg
Pyrene	<6.0	6.0	ug/kg

Surrogate	Percent Recovery	Control Limits
Nitrobenzene-d5	77.64	(35 - 114)
2-Fluorobiphenyl	86.55	(43 - 116)
p-Terphenyl-d14	86.07	(33 - 141)

EA GROUP
Laboratories

Metals Method Blank QC Report

EAG ID: MB **Matrix:** Soil
Analysis Date: 7/17/00
Method:SW846-6010A
Associated Samples: 0007-00137-001, 002, 004, 005, 006

Parameter	Result	Reporting Limit	Units	Date Prep/Analyzed
Arsenic: SW846-6010A	<25	25	mg/kg	7/13/00-7/17/00
Barium: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Cadmium: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Chromium: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Copper: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Lead: SW846-6010A	<10	10.0	mg/kg	7/13/00-7/17/00
Nickel: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Selenium: SW846-6010A	<25	25	mg/kg	7/13/00-7/17/00
Silver: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00
Zinc: SW846-6010A	<5	5.0	mg/kg	7/13/00-7/17/00

EA GROUP
Laboratories

PAH LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS
Analysis Date: 07/14/00
Method: SW-846 8270
Associated Samples: 0007-00137-001, 002

Matrix: Soil
QC Batch: 18326

Parameter PAH 8270	LCS Percent Recovery	LCSD Percent Recovery	Control Limits Limits	RPD	RPD Control Limits
Phenol	75	77	5-112	3%	0-20
2-Chlorophenol	76	76	23-134	0%	0-20
1,4-Dichlorobenzene	76	76	20-124	0%	0-20
N-Nitrosodiphenylamine	83	63	0-230	27%	0-20
1,2,4- Trichlorobenzene	80	76	44-142	5%	0-20
4-Chloro-3-methylphenol	74	69	22-147	7%	0-20
Acenaphthene	84	82	47-145	2%	0-20
2,4- Dinitrotoluene	73	71	39-139	3%	0-20
4-Nitrophenol	60	57	0-132	5%	0-20
Pentachlorophenol	68	68	14-176	0%	0-20
Pyrene	83	81	52-115	2%	0-20

Surrogate	Percent Recovery	Percent Recovery	Control Limits	RPD	RPD Control Limits
Nitrobenzene-d5	75.75	72.42	(35 - 114)	4%	0-20
2-Fluorobiphenyl	62.68	59.01	(43 - 116)	6%	0-20
p-Terphenyl-d14	85.53	85.46	(33 - 141)	0%	0-20

EA GROUP
Laboratories

Metals LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS/ LCSDUP **Matrix:** Soil
Analysis Date: 7/17/00
Method:SW846-6010A
Associated Samples: 0007-00137-001, 002, 004, 005, 006

Parameter	LCS Percent Recovery	LCSDUP Percent Recovery	Control Limits	RPD	RPD Control Limits	Date Prep/Analyzed
Arsenic: SW846-6010A	95.3	95.9	80-120	1%	0-20	7/13/00-7/17/00
Barium: SW846-6010A	90.3	89.1	80-120	1%	0-20	7/13/00-7/17/00
Cadmium: SW846-6010A	91.6	91.9	80-120	0%	0-20	7/13/00-7/17/00
Chromium: SW846-6010A	90.8	92.7	80-120	2%	0-20	7/13/00-7/17/00
Copper: SW846-6010A	92	92.6	80-120	1%	0-20	7/13/00-7/17/00
Lead: SW846-6010A	90.9	90.2	80-120	1%	0-20	7/13/00-7/17/00
Nickel: SW846-6010A	93.9	91.9	80-120	2%	0-20	7/13/00-7/17/00
Selenium: SW846-6010A	93.5	93.3	80-120	0%	0-20	7/13/00-7/17/00
Silver: SW846-6010A	87.2	88.6	80-120	2%	0-20	7/13/00-7/17/00
Zinc: SW846-6010A	93.9	94.7	80-120	1%	0-20	7/13/00-7/17/00

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PAH MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) REPORT

EAG ID: 0007-00132-002 Matrix: Soil
Analysis Date: 07/15/00 QC Batch: 18326
Method:SW-846 8270
Associated Samples: 0007-00137-001, 002

Parameter	MS Percent Recovery	MSD Percent Recovery	Control Limits	RPD	RPD Control Limits
PAH 8270					
Phenol	51	42	5-112	19%	0-20
2-Chlorophenol	56	44	23-134	24%	0-20
1,4-Dichlorobenzene	55	43	20-124	24%	0-20
N-Nitrosodiphenylamine	67	59	0-230	13%	0-20
1,2,4- Trichlorobenzene	67	59	44-142	13%	0-20
4-Chloro-3-methylphenol	70	66	22-147	6%	0-20
Acenaphthene	80	76	47-145	5%	0-20
2,4- Dinitrotoluene	54	59	39-139	9%	0-20
4-Nitrophenol	35	35	0-132	0%	0-20
Pentachlorophenol	71	75	14-176	5%	0-20
Pyrene	54	52	52-115	4%	0-20

Surrogate	MS Percent Recovery	MSD Percent Recovery	Control Limits	RPD	RPD Control Limits
Nitrobenzene-d5	59	45.95	(35 - 114)	25%	0-20
2-Fluorobiphenyl	DIL	DIL	(43 - 116)	NA	0-20
p-Terphenyl-d14	DIL	DIL	(33 - 141)	NA	0-20

EA GROUP
Laboratories

METALS MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) REPORT

EAG ID: 0007-00137-001 **Matrix:** Soil
Analysis Date: 7/17/00
Method:SW846-6010A
Associated Samples: 0007-00137-001, 002, 004, 005, 006

Parameter	MS Percent Recovery	MSD Percent Recovery	Control Limits	RPD	RPD Control Limits	Date Prep/Analyzed
Arsenic: SW846-6010A	67.0	68.5	80-120	2%	0-20	7/13/00-7/17/00
Barium: SW846-6010A	66.6	70.4	80-120	6%	0-20	7/13/00-7/17/00
Cadmium: SW846-6010A	58.2	60.3	80-120	4%	0-20	7/13/00-7/17/00
Chromium: SW846-6010A	61.7	63.9	80-120	4%	0-20	7/13/00-7/17/00
Copper: SW846-6010A	68.5	70.7	80-120	3%	0-20	7/13/00-7/17/00
Lead: SW846-6010A	61.6	61.9	80-120	0%	0-20	7/13/00-7/17/00
Nickel: SW846-6010A	63.8	65.3	80-120	2%	0-20	7/13/00-7/17/00
Selenium: SW846-6010A	59.8	54.7	80-120	9%	0-20	7/13/00-7/17/00
Silver: SW846-6010A	34.8	45.6	80-120	27%	0-20	7/13/00-7/17/00
Zinc: SW846-6010A	69.9	70.8	80-120	1%	0-20	7/13/00-7/17/00

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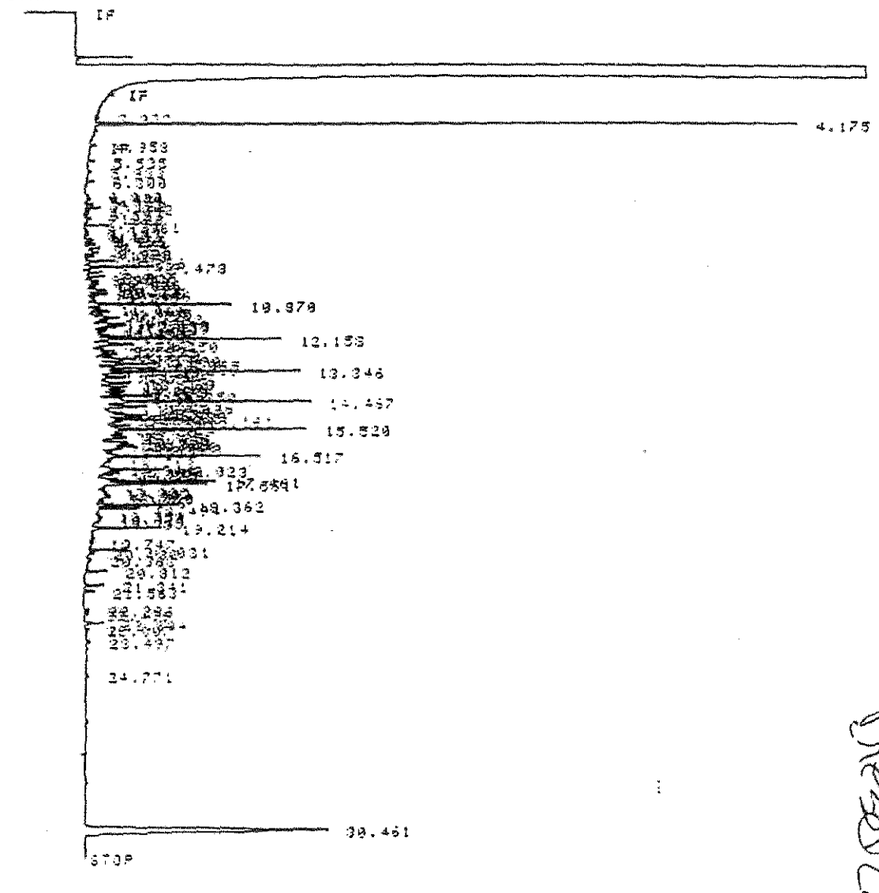
SAMPLE RAW DATA

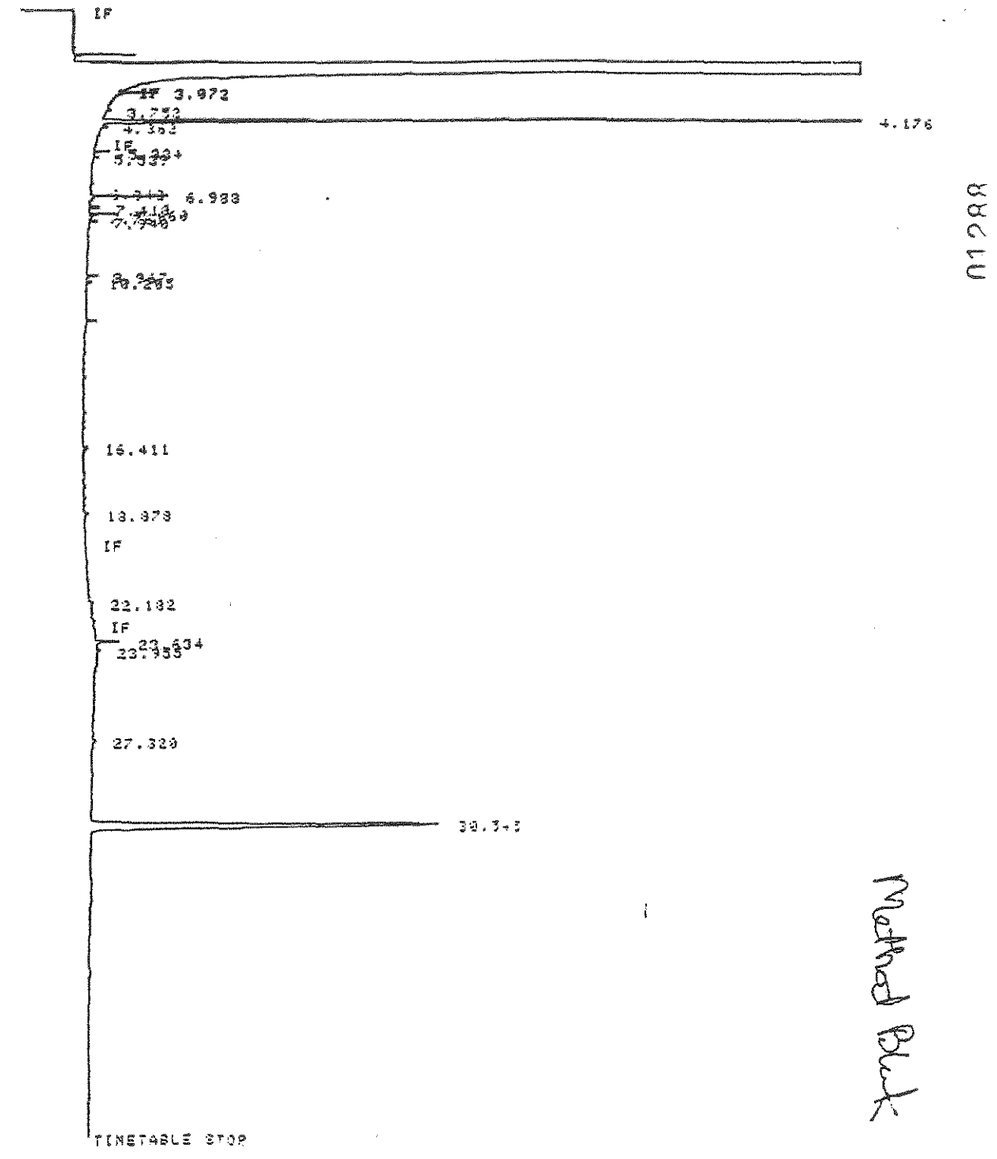
```
  FIRST BOTTLE          1 -->    2  @
  LAST BOTTLE           1 -->    2  @
  # OF SAMPLE WASHES    2 -->       BREAK

*  SEQ  START
Waiting for system readiness
RUN #    2      JUL 17, 2000  10:01:00
START
```




```
RUN#     2          JUL 17, 2000  10:01:00

SAMPLE NAME: CALCHECK          SAMPLE#    2
METHOD NAME: M*DRDMH.MET
DIESEL

ESTD-AREA
      RT        AREA  TYPE  CAL#        AMOUNT
   3.933        1670    BP                .000
   4.175      263121    PP                .000
   4.958        3157    PP                .000
  14.000     2823119    ++                .000
  20.307        2171    PV                .000
  23.467        4440    VV                .000
  24.771        1951    PP                .000
  30.461          ?     ?                 .000
```

Diesel Cal Check
4/17

RUN 9 4 JUL 17, 2000 11:42:43
START



011288

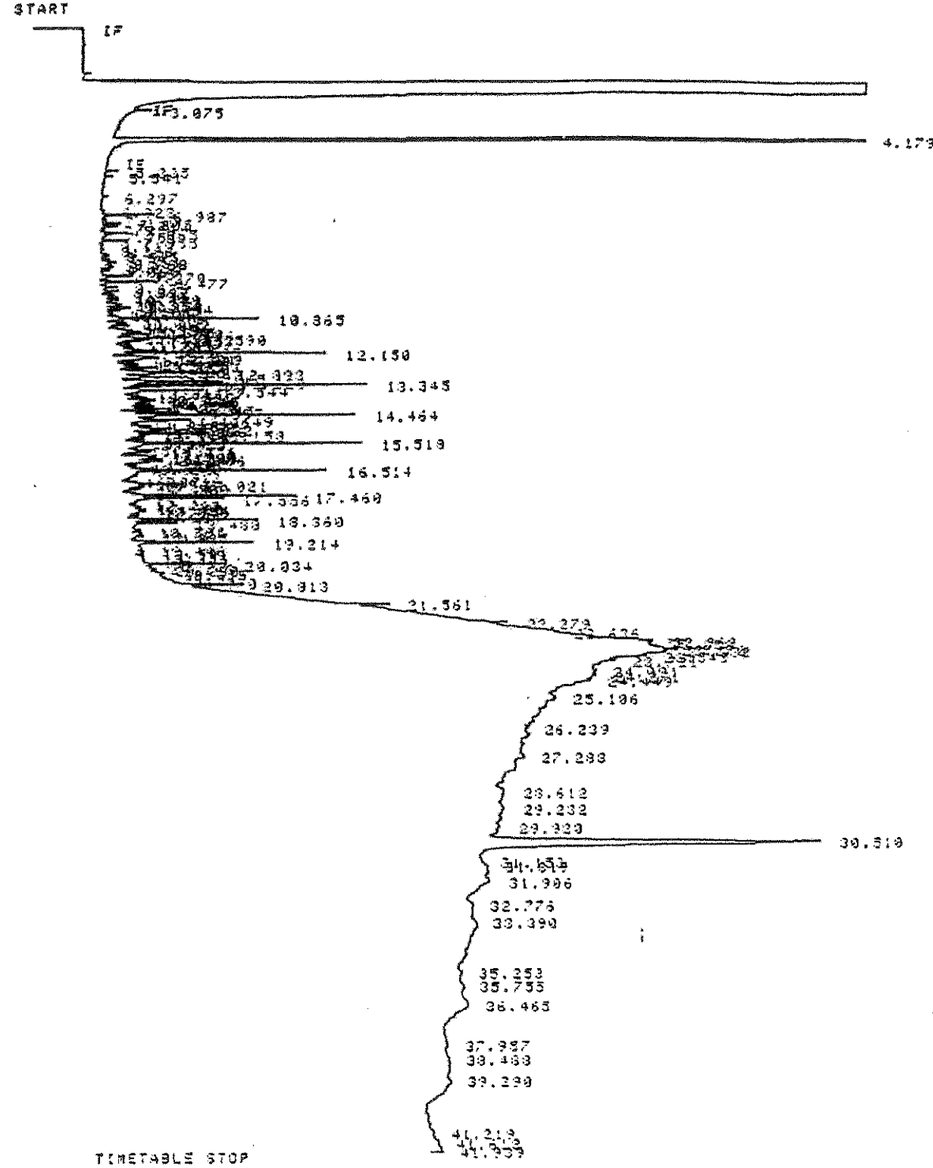
Method Blank

RUN# 4 JUL 17, 2000 11:42:43

SAMPLE NAME: METH BLANK SAMPLE# 4
METHOD NAME: M*OROMH.MET

ESTD-AREA RT	AREA	TYPE	CAL#	AMOUNT
3.972	14324	SP		.300
3.772	1137	BP		.000

RUN # 23 JUL 18, 2000 05:31:57
START



TIMETABLE STOP

RUN# 23 JUL 18, 2000 05:31:57

SAMPLE NAME: LCS DUP SAMPLE# 23
METHOD NAME: M+ORGMH.MET

ESTD-AREA

RT	AREA	TYPE	CAL#	AMOUNT
3.075	14977	BF		.000
4.179	3651718	SF		.000

01358

LCS DUP

Reject - carryover

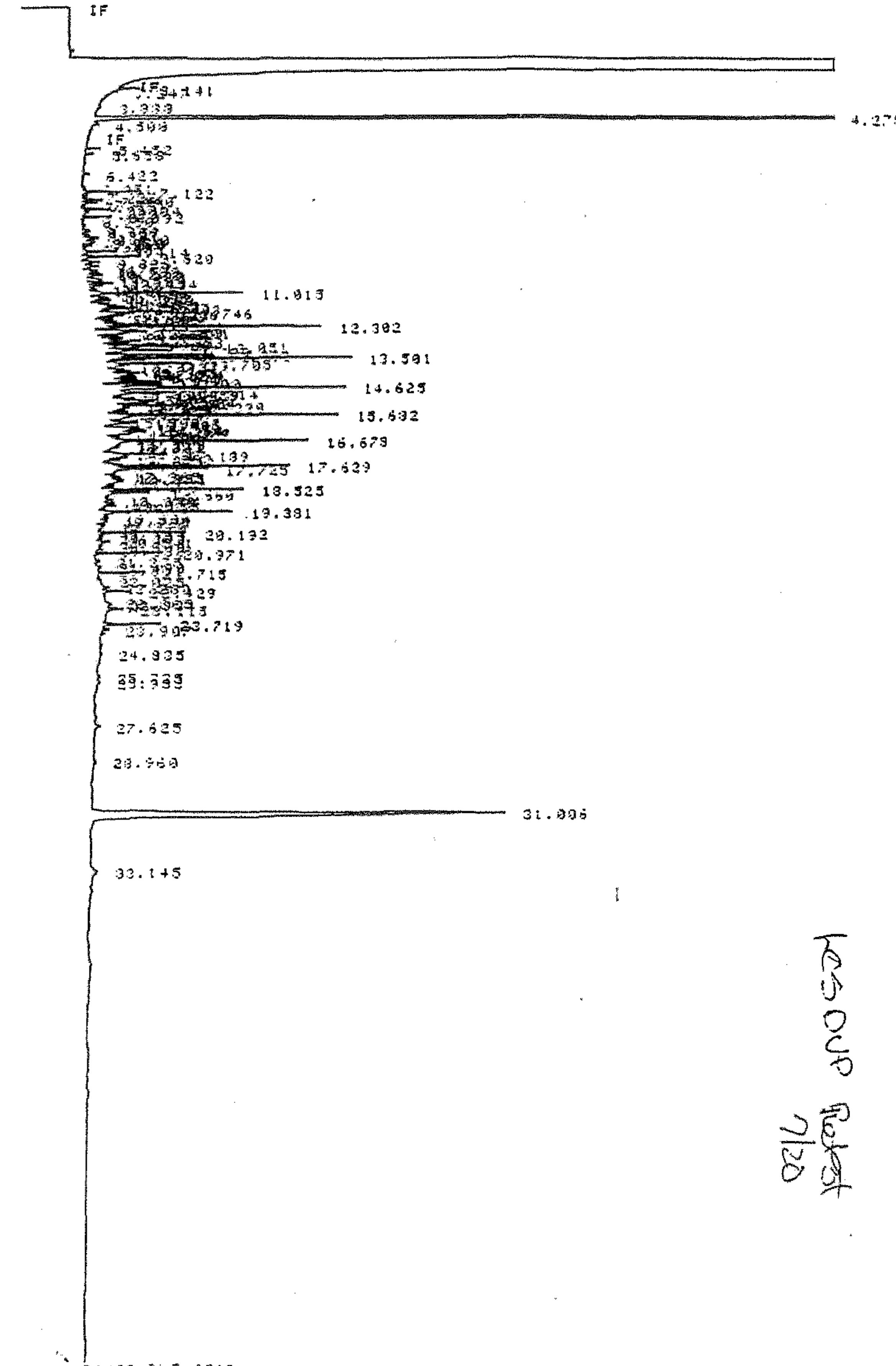
01377

```
* SEQ START
RUN #    3      JUL 19, 2000  11:20:44
START
  |
  |--IF
  |
  |--4.345
  |--11.173
  |--12.574
  |--13.846
  |--15.013
  |--16.107
  |--17.124
  |--19.998
  |--19.845
  |--24.350
  |--28.805
  |--32.660
  |
  STOP
```

```
RUN#     3          JUL 19, 2000  11:20:44

SAMPLE NAME: CALCHECK          SAMPLE#    2
METHOD NAME: M*OROMM.MET

BREAK

ABORTED

* EDIT CALIB   2
```

Diesel Cal Check 7/20

RUN # 15 JUL 20, 2000 00:13:53
START

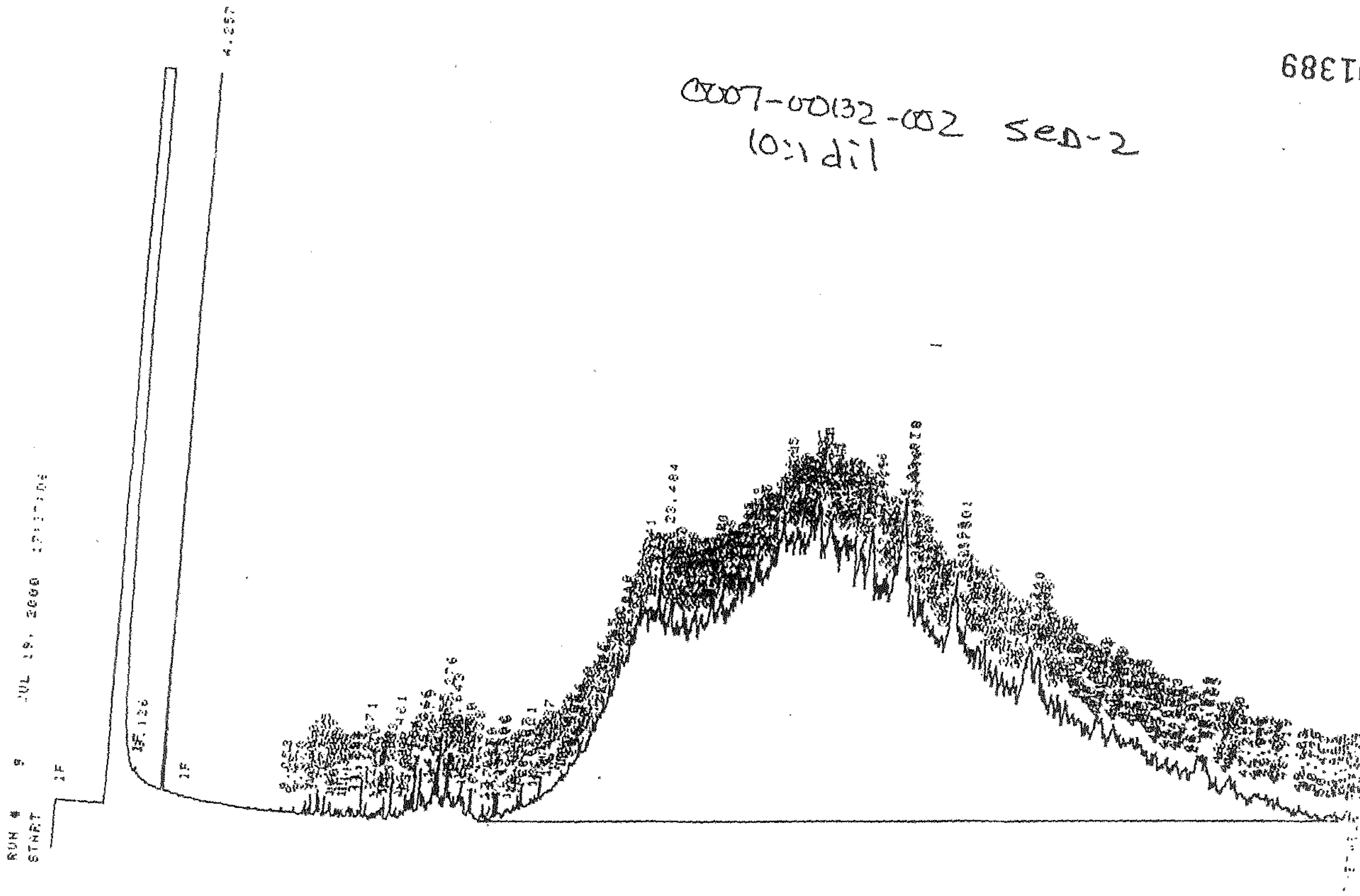


01402

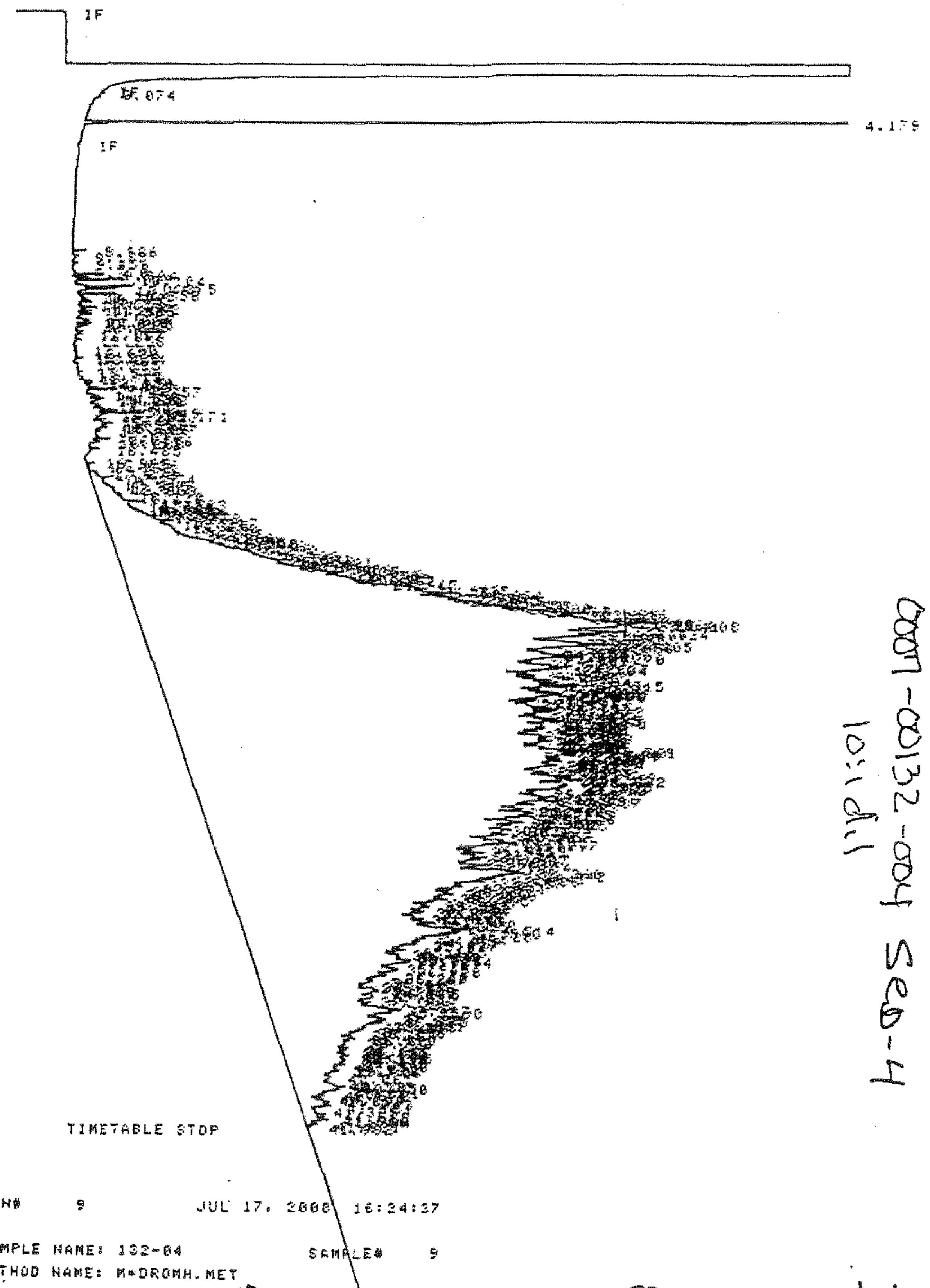
Res Dup Retest 7/20

01389

0007-00132-002 Sed-2
10:1 dil



RUN # 9 JUL 17, 2000 16:24:37
START



01306

0007-00132-004 SED-4
10:1 dil

RUN# 9 JUL 17, 2000 16:24:37

SAMPLE NAME: 132-04 SAMPLE# 9
METHOD NAME: M*DROMH.MET
10:1 dil

MOTOR OIL = 93.0mm = 5200 ug/ml

ESTD-AREA

RT	AREA	TYPE	CAL#	AMOUNT
3.674	2212	BP		[illegible]
4.179	[illegible]	PP		[illegible]
[illegible]	[illegible]			[illegible]

0507-00137-001 WWTA-01
No DIL

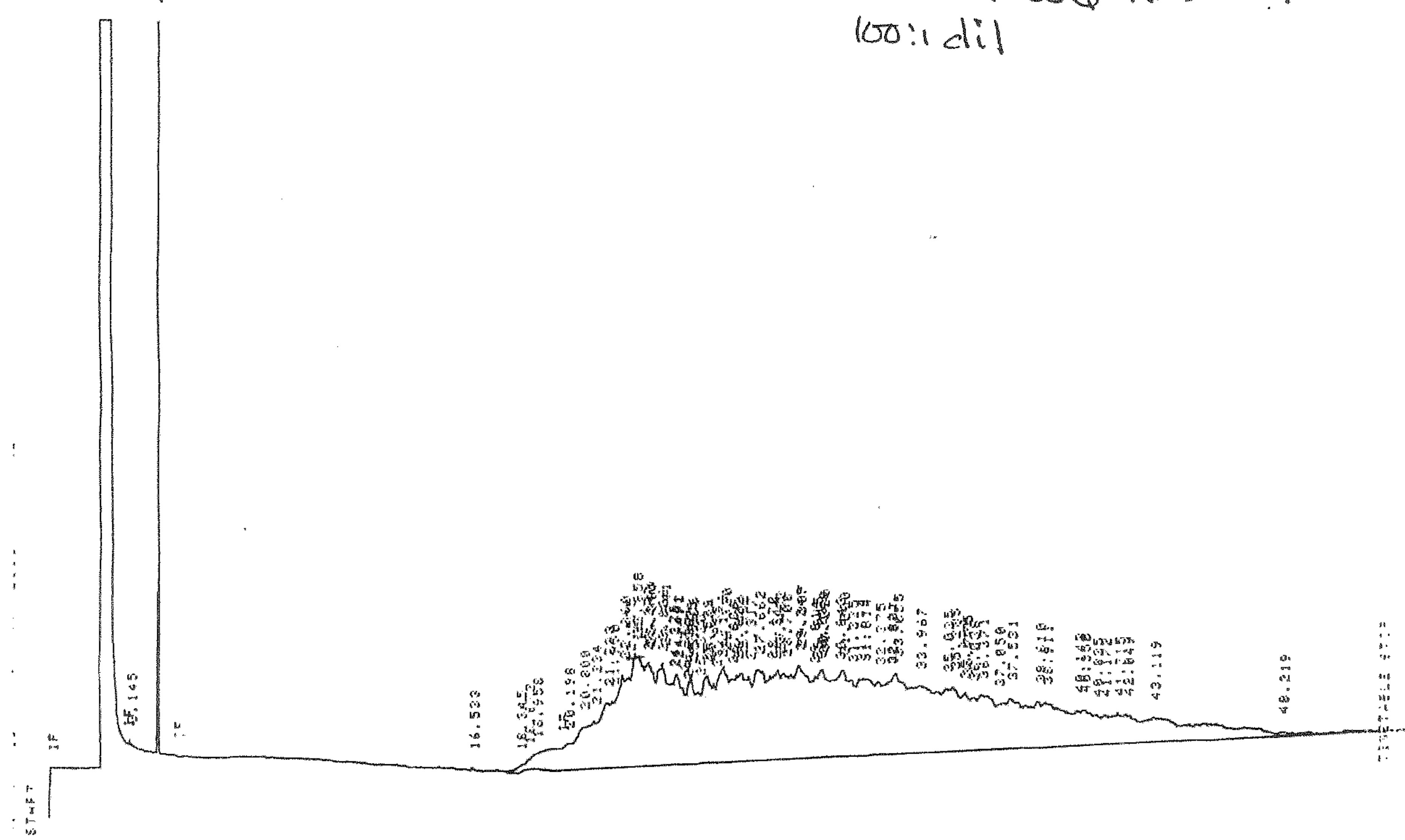
01382

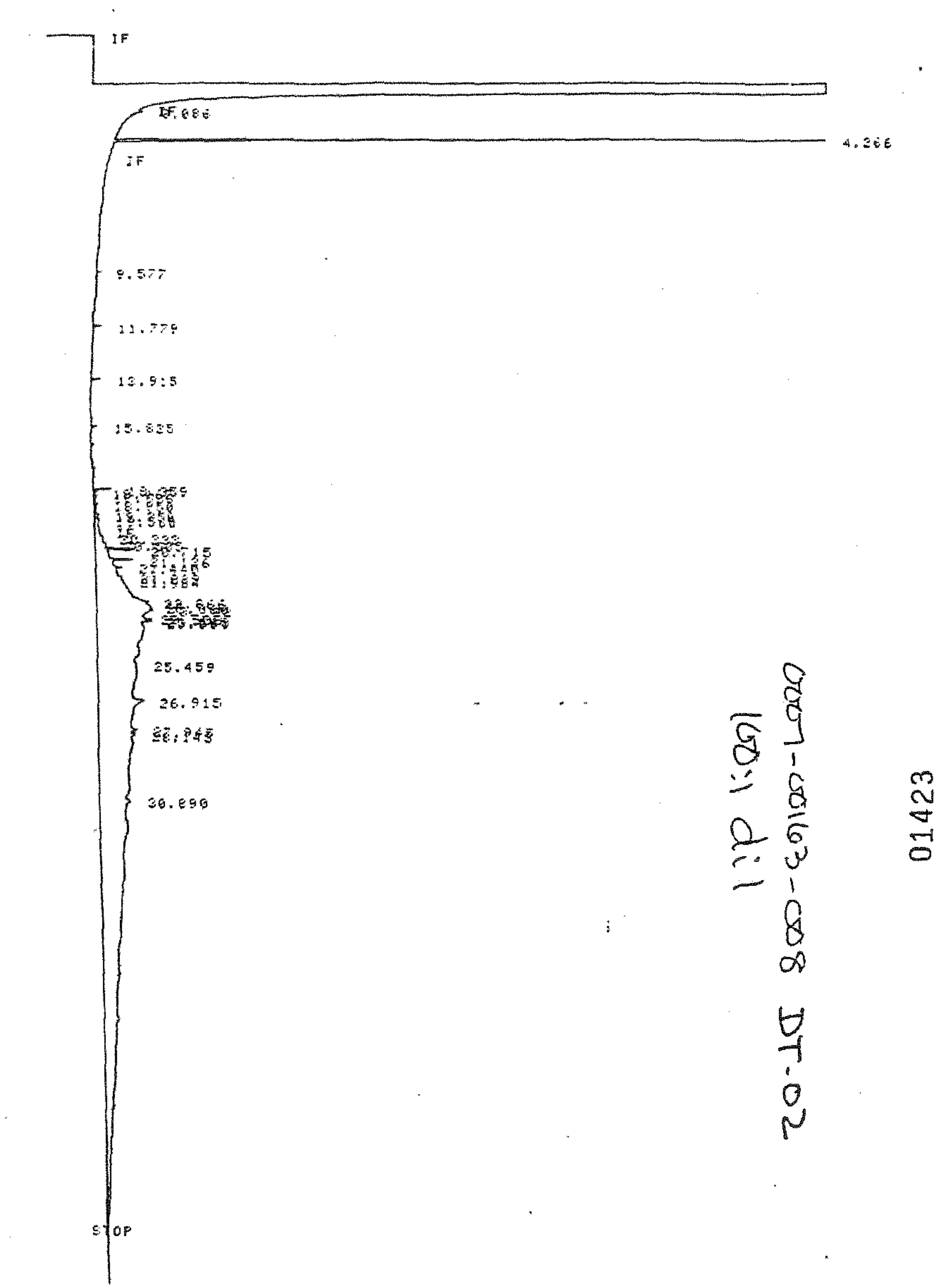
01386

0307-00137-003 WWTM-03
NO OIL

0139

0007-00163-006 RMSP-01
100:1 dil





RUN# 22 JUL 20, 2000 11:50:51

SAMPLE NAME: 163-08 SAMPLE# 31

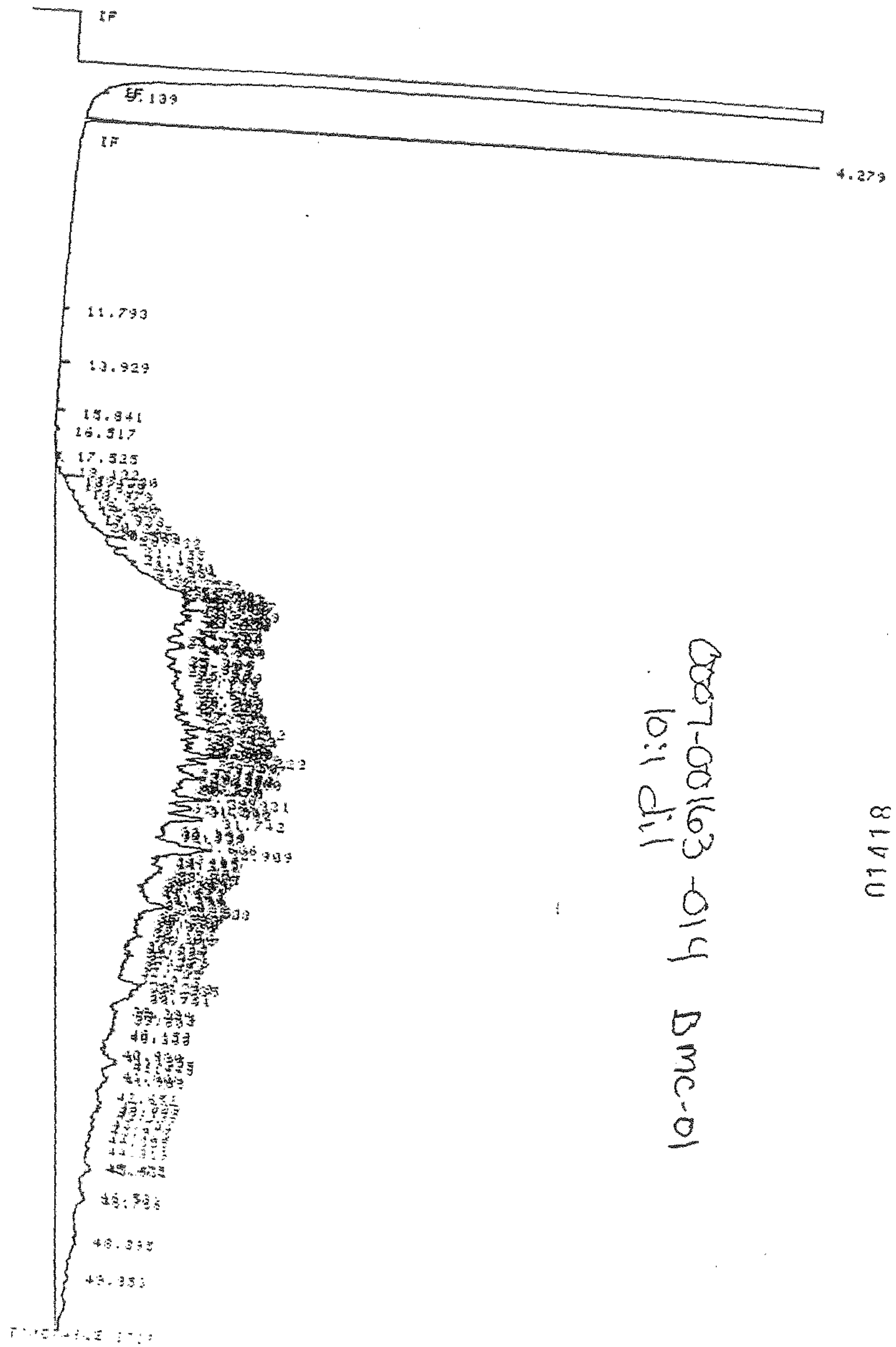
METHOD NAME: H-DPONH.MET

0007-00163-008 DT-02

100:1 dil

01423

RUN # 20 JUL 20, 2000 09:37:40
START



0007-00163-014 BMC-01
10:1 dil

01418

VAP PRODUCCION

EA GROUP

118 INDUSTRIAL PARK BLVD. MENTOR, OHIO 44060-5314
440) 951-3514 FAX (440) 951-3774 (800) 875-3514
ebsite: www.eagroup-ohio.com customerservice@eagroup-ohio.com

CHAIN OF CUSTODY

PLEASE DO NOT SEPARATE FORMS

(INDUSTRIAL)

EAG WORK ORDER # 1137

PAGE ___ OF ___

Company Name: HART COURIER
Report Address: 1910 FAIRVIEW EAST
City: SEATTLE State: WA Zip: 98102
Billing Address:
City: State: Zip:
Phone: 206 324-9530 Fax: 206 328-5551
Report Attention: Will Abercrombie
Project Name: #7398-01
P.O. #:

TURNAROUND (✓)
RUSH ✓
REPORT BY FAX AS AVAILABLE DEADLINE 7/19
NORMAL ___

RESULTS (✓)
MAIL ✓
FAX ✓

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	MATRIX	COLLECTION TIME	COLLECTION DATE	TPH DRO	PAHs 8270	Metals - Pb	Hold	SAMPLE REMARKS: CONDITION, ETC....
WWTA-01				X	X	X	X	
WWTA-02				X	X	X	X	
WWTA-03				X				
WWTA-04						X		
SHSA-01						X	X	
SHSA-02						X	X	

ALL DATA TO BE REPORTED IN ACCORDANCE WITH EA GROUP'S STANDARD TERMS AND CONDITIONS

SEE REVERSE FOR HOLD TIME RESTRICTIONS

Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time
[signature]	7/12/00 15:45	COURIER	7/12/00 4:40P
Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time
		VIA EAG COURIER	
Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time

Additional Comments:
DATA TO BE FAXED AS AVAILABLE
FINAL DUE 7/19 W/ EXCEL ELECTRONIC DELIVERABLE
TPH CHROMATOGRAM COPIES REQUIRED

WHITE - FILE YELLOW - INVOICE PINK - REPORT

EA GROUP
Laboratories

AFFIDAVIT

EA Group (VAP Laboratory No. CL0015)

STATE OF OHIO

COUNTY OF LAKE

I, **Patrick Herbert**, being first duly sworn according to law deposes and states that, to the best of my knowledge, information and belief:

1) I am an adult over the age of eighteen (18) years old and competent to testify herein.

2) I was employed by **EA Group** as **President** and was authorized to submit this affidavit on behalf of **EA Group** for the attached report.

3) **EA Group** or it's VAP certified subcontract laboratory performed analysis for **Hart Crowser** concerning a voluntary action for the property located at: **ASW #7398-01.**

4) **EA Group** or it's subcontract laboratory was a certified laboratory pursuant to Ohio Revised Code (ORC) Chapter 3746 and Ohio Administrative Code (OAC) Chapter 3745-300 when it performed the analysis for the purposes of conducting or completing the voluntary action.

5) All of the analyses performed by **EA Group**, or it's subcontract laboratory, for the purposes of conducting or completing the voluntary action at the referenced property, complied with the applicable requirements of ORC Chapter 3746 and rules adopted under OAC 3745-300.

6) The information, data, documents and reports provided for the purposes of conduction or completing the voluntary action at the referenced property are identified in the attachment(s) hereto as **0007-00163.**

7) All information, data, documents and reports submitted by **EA Group**, identified in the attachment(s) of this affidavit and submitted for the purposes of conduction or completing this voluntary action are the true, accurate and complete reporting of the results of analysis.

8) **EA Group** has no conflict of interest, as set forth in OAC rules 3745-300-04(I) and 3745-300-05(F)(3), in performing the analysis for **Hart Crowser** for the referenced property.

Patrick Herbert

Further affiant sayeth naught

President
Affiant Signature

Sworn to me this 21st day of July

EUGENE REILLY Eugene Reilly
Notary
Commission Expires 8/30/01

EA GROUP
Laboratories

Project Summary

The following analytical report contains the results as requested for samples submitted to EA Group. The results included in this report have been reviewed for compliance with the analytical methods indicated in this report. All data have been found to be compliant with accepted laboratory protocol. Exceptions, if any, are noted below. Analytes appearing in bold type were analyzed at a subcontract facility.

Data Interpretation

For assistance with report interpretation or questions regarding regulatory limits, please contact Client Services at 440-951-3514 or customerservice@eagroup-ohio.com.

Sample Summary

Sample Receive Date: 7/13/00

EAG Sample Identification	Client Sample Identification	EAG Sample Identification	Client Sample Identification
000700163 - 001	RMRF-02	000700163 - 002	RMRF-03
000700163 - 003	RMRF-01	000700163 - 004	BMRF-02
000700163 - 005	DT-01	000700163 - 006	RMSP-01
000700163 - 007	RMSP-01 Native	000700163 - 008	DT-02
000700163 - 009	DT-03	000700163 - 010	BMRF-01
0700163 - 011	BMSP-01	000700163 - 012	BMSP-02
00700163 - 013	BMRF-03	000700163 - 014	BMC-01

Quality Control Narrative

** HOLD A portion of sample is being retained on "HOLD", as per client request.

A "J" qualifier indicates estimated results, the value reported is below the standard laboratory reporting limit.

"Dil" in the analytical report indicates that due to matrix interference or high analyte concentration, a dilution was required and the spiked concentration could not be quantitated.

MS and MSD were out of statistical advisory limits for Cd, Cr, Pb, and Se due to matrix interference.

The Relative Percent Difference (RPD) for the MS/MSD pair for Cu was outside of statistical advisory limits due to matrix interference.

The Relative Percent Difference (RPD) for the LCS/LCSD pair for PAH compound N-Nitrosodiphenylamine on QC batch 18349 was outside statistical advisory limits. The analyrical data was reported based on other supporting quality ontrol information.

he Relative Percent Difference (RPD) for the MS/MSD pair for PAH compounds -Nitrosodiphenylamine and 2-Chlorophenol on QC batch 18349 was outside statistical advisory limits due to matrix interference.

The Relative Percent Difference (RPD) for surrogate Nitrobenzene-d5 for the MS/MSD pair in PAH QC batch 18349 was outside statistical advisory limits due

EA GROUP
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ANALYTICAL RESULTS

Workorder: 0007-00163

EAGROUP
Laboratories

EAG ID: 0007-00163-3 Client ID: RMRF-01 Sampled: 7/13/2000 Received: 7/13/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Arsenic: SW846-6010A	<27	27	mg/kg	7/17/2000	7/19/2000
Barium: SW846-6010A	140	5.3	mg/kg	7/17/2000	7/19/2000
Cadmium: SW846-6010A	42 J	5.3	mg/kg	7/17/2000	7/19/2000
Chromium: SW846-6010A	270 J	5.3	mg/kg	7/17/2000	7/19/2000
Copper: SW846-6010A	600	5.3	mg/kg	7/17/2000	7/19/2000
Lead: SW846-6010A	960 J	11	mg/kg	7/17/2000	7/19/2000
Mercury, SW846-7471	0.19	0.088	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	190	5.3	mg/kg	7/17/2000	7/19/2000
Selenium: SW846-6010A	<80 J	80	mg/kg	7/17/2000	7/19/2000
[illegible]: SW846-6010A	<5.3	5.3	mg/kg	7/17/2000	7/19/2000
[illegible]: SW846-6010A	500	5.3	mg/kg	7/17/2000	7/19/2000

EAG ID: 0007-00163-4 Client ID: BMRF-02 Sampled: 7/13/2000 Received: 7/13/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Arsenic: SW846-6010A	<28	28	mg/kg	7/17/2000	7/19/2000
Barium: SW846-6010A	160	5.5	mg/kg	7/17/2000	7/19/2000
Cadmium: SW846-6010A	20 J	5.5	mg/kg	7/17/2000	7/19/2000
Chromium: SW846-6010A	230 J	5.5	mg/kg	7/17/2000	7/19/2000
Copper: SW846-6010A	79	5.5	mg/kg	7/17/2000	7/19/2000
Lead: SW846-6010A	170 J	11	mg/kg	7/17/2000	7/19/2000
Mercury, SW846-7471	0.18	0.092	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	46	5.5	mg/kg	7/17/2000	7/19/2000
Selenium: SW846-6010A	<44 J	44	mg/kg	7/17/2000	7/19/2000
Silver: SW846-6010A	<5.5	5.5	mg/kg	7/17/2000	7/19/2000
[illegible]: SW846-6010A	690	5.5	mg/kg	7/17/2000	7/19/2000

7/24/00
JHL

Workorder: 0007-00163

EAGROUP
Laboratories

EAG ID: 0007-00163-10 Client ID: BMRF-01 Sampled: 7/13/2000 Received: 7/13/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Arsenic: SW846-6010A	<27	27	mg/kg	7/17/2000	7/19/2000
Barium: SW846-6010A	190	5.3	mg/kg	7/17/2000	7/19/2000
Cadmium: SW846-6010A	7.2 J	5.3	mg/kg	7/17/2000	7/19/2000
Chromium: SW846-6010A	120 J	5.3	mg/kg	7/17/2000	7/19/2000
Copper: SW846-6010A	53	5.3	mg/kg	7/17/2000	7/19/2000
Lead: SW846-6010A	73 J	11	mg/kg	7/17/2000	7/19/2000
Mercury, SW846-7471	<0.089	0.089	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	30	5.3	mg/kg	7/17/2000	7/19/2000
Selenium: SW846-6010A	<27 J	27	mg/kg	7/17/2000	7/19/2000
r: SW846-6010A	<5.3	5.3	mg/kg	7/17/2000	7/19/2000
c: SW846-6010A	230	5.3	mg/kg	7/17/2000	7/19/2000

EAG ID: 0007-00163-11 Client ID: BMSP-01 Sampled: 7/13/2000 Received: 7/13/00

Parameter	Result	Sample Reporting Limit	Units	Prep Date	Analysis Date
Arsenic: SW846-6010A	<27	27	mg/kg	7/17/2000	7/19/2000
Barium: SW846-6010A	81	5.3	mg/kg	7/17/2000	7/19/2000
Cadmium: SW846-6010A	33 J	5.3	mg/kg	7/17/2000	7/19/2000
Chromium: SW846-6010A	180 J	5.3	mg/kg	7/17/2000	7/19/2000
Copper: SW846-6010A	280	5.3	mg/kg	7/17/2000	7/19/2000
Lead: SW846-6010A	92 J	11	mg/kg	7/17/2000	7/19/2000
Mercury, SW846-7471	<0.089	0.089	mg/kg	7/14/2000	7/14/2000
Nickel: SW846-6010A	170	5.3	mg/kg	7/17/2000	7/19/2000
Selenium: SW846-6010A	<270 J	270	mg/kg	7/17/2000	7/19/2000
Silver: SW846-6010A	<5.3	5.3	mg/kg	7/17/2000	7/19/2000
c: SW846-6010A	87	5.3	mg/kg	7/17/2000	7/19/2000

7/24/00
JHL

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	RMRF-02	**QC Batch:**	000000	**Date Received:**	07/13/2000
EAG ID:	0007-00163-001	**Moisture (%)**	6.2	**Date Prepped:**	
				Date Analyzed:	07/13/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	BMRF-02	**QC Batch:**	000000	**Date Received:**	07/13/2000
EAG ID:	0007-00163-004	**Moisture (%)**	9.8	**Date Prepped:**	
				Date Analyzed:	07/13/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	DT-01	**QC Batch:**	018309	**Date Received:**	07/13/2000
EAG ID:	0007-00163-005	**Moisture (%)**	2.6	**Date Prepped:**	07/17/2000
				Date Analyzed:	07/17/2000

Parameter	Result	Sample Reporting Limit	Units
BTEX; SW846 - 8260			
Benzene	<2.1	2.1	ug/kg
Toluene	<2.1	2.1	ug/kg
Ethylbenzene	<2.1	2.1	ug/kg
Xylenes (total)	<2.1	2.1	ug/kg
Methyl tert-butyl ether	<10	10	ug/kg

Surrogate	Percent Recovery	Recovery Limits
1,2-Dichloroethane-d4	95.3	(80 - 120)
Toluene-d8	85.7	(81 - 117)
4-Bromofluorobenzene	96.7	(74 - 121)

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	DT-01	**QC Batch:**	018381	**Date Received:**	07/13/2000
EAG ID:	0007-00163-005	**Moisture (%)**	2.6	**Date Prepped:**	07/19/2000
				Date Analyzed:	07/19/2000

Parameter	Result	Sample Reporting Limit	Units
Total Petroleum Hydrocarbons			
Extractable Petroleum Hydrocarbons; C10-C20	60	51	mg/kg
Extractable Petroleum Hydrocarbons; C16-C34	190	51	mg/kg
Total Extractables	250	51	mg/kg

Surrogate	Percent Recovery	Recovery Limits
Tricontane	55.2	(30 - 130)

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	RMSP-01	**QC Batch:**	018349	**Date Received:**	07/13/2000
EAG ID:	0007-00163-006	**Moisture (%)**	5.2	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/16/2000

Parameter	Result	Sample Reporting Limit	Units
Semivolatile Organic Compounds: SW846-8270B			
Acenaphthene	<310	310	ug/kg
Acenaphthylene	<310	310	ug/kg
Anthracene	<310	310	ug/kg
Benzo(a)anthracene	<310	310	ug/kg
Benzo(a)pyrene	<310	310	ug/kg
Benzo(b)fluoranthene	<310	310	ug/kg
Benzo(g,h,i)perylene	<310	310	ug/kg
Benzo(k)fluoranthene	<310	310	ug/kg
Chrysene	<310	310	ug/kg
Dibenz[a,h]anthracene	59 J	310	ug/kg
Fluoranthene	<310	310	ug/kg
Fluorene	<310	310	ug/kg
›o[1,2,3-cd]pyrene	<310	310	ug/kg
halene	<310	310	ug/kg
anthrene	<310	310	ug/kg
ene	<310	310	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	64.3	(35 - 114)
2-Fluorobiphenyl	83.4	(43 - 116)
p-Terphenyl-d14	124	(33 - 141)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

EAGROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	RMSP-01 Native	**QC Batch:**	000000	**Date Received:**	07/13/2000
EAG ID:	0007-00163-007	**Moisture (%)**	5.8	**Date Prepped:**	
				Date Analyzed:	07/13/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	RMSP-01 Native	**QC Batch:**	018381	**Date Received:**	07/13/2000
EAG ID:	0007-00163-007	**Moisture (%)**	5.8	**Date Prepped:**	07/19/2000
				Date Analyzed:	07/20/2000

Parameter	Result	Sample Reporting Limit	Units
Total Petroleum Hydrocarbons			
Extractable Petroleum Hydrocarbons; C10-C20	<53	53	mg/kg
Extractable Petroleum Hydrocarbons; C16-C34	560	53	mg/kg
Total Extractables	560	53	mg/kg

Surrogate	Percent Recovery	Recovery Limits
Tricontane	95.1	(30 - 130)

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	DT-02	**QC Batch:**	018309	**Date Received:**	07/13/2000
EAG ID:	0007-00163-008	**Moisture (%)**	2.2	**Date Prepped:**	07/17/2000
				Date Analyzed:	07/17/2000

Parameter	Result	Sample Reporting Limit	Units
BTEX; SW846 - 8260			
Benzene	<2.0	2.0	ug/kg
Toluene	<2.0	2.0	ug/kg
Ethylbenzene	<2.0	2.0	ug/kg
Xylenes (total)	<2.0	2.0	ug/kg
Methyl tert-butyl ether	<10	10	ug/kg

Surrogate	Percent Recovery	Recovery Limits
1,2-Dichloroethane-d4	94.1	(80 - 120)
Toluene-d8	87.2	(81 - 117)
4-Bromofluorobenzene	103	(74 - 121)

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	DT-02	**QC Batch:**	018381	**Date Received:**	07/13/2000
EAG ID:	0007-00163-008	**Moisture (%)**	2.2	**Date Prepped:**	07/20/2000
				Date Analyzed:	07/20/2000

Parameter	Result	Sample Reporting Limit	Units
Total Petroleum Hydrocarbons			
Extractable Petroleum Hydrocarbons; C10-C20	<520	520	mg/kg
Extractable Petroleum Hydrocarbons; C16-C34	3200	520	mg/kg
Total Extractables	3200	520	mg/kg

Surrogate	Percent Recovery	Recovery Limits
Tricontane	Dil	(30 - 130)

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	DT-03	**QC Batch:**	018349	**Date Received:**	07/13/2000
EAG ID:	0007-00163-009	**Moisture (%)**	2.3	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/17/2000

Parameter	Result	Sample Reporting Limit	Units
Semivolatile Organic Compounds: SW846-8270B			
Acenaphthene	<3000	3000	ug/kg
Acenaphthylene	<3000	3000	ug/kg
Anthracene	<3000	3000	ug/kg
Benzo(a)anthracene	1000 J	3000	ug/kg
Benzo(a)pyrene	1100 J	3000	ug/kg
Benzo(b)fluoranthene	1300 J	3000	ug/kg
Benzo(g,h,i)perylene	770 J	3000	ug/kg
Benzo(k)fluoranthene	750 J	3000	ug/kg
Chrysene	1400 J	3000	ug/kg
Dibenz[a,h]anthracene	<3000	3000	ug/kg
Fluoranthene	2300 J	3000	ug/kg
Fluorene	<3000	3000	ug/kg
`no[1.2,3-cd]pyrene	<3000	3000	ug/kg
ithalene	<3000	3000	ug/kg
nanthrene	1600 J	3000	ug/kg
ne	1800 J	3000	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	35.5	(35 - 114)
2-Fluorobiphenyl	DIL	(43 - 116)
p-Terphenyl-d14	43.2	(33 - 141)

J indicates estimated results, the value reported is below the standard laboratory reporting limit.

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	BMSP-01	**QC Batch:**	000000	**Date Received:**	07/13/2000
EAG ID:	0007-00163-011	**Moisture (%)**	6.3	**Date Prepped:**	
				Date Analyzed:	07/13/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EAGROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	BMSP-01	**QC Batch:**	018381	**Date Received:**	07/13/2000
EAG ID:	0007-00163-011	**Moisture (%)**	6.3	**Date Prepped:**	07/20/2000
				Date Analyzed:	07/20/2000

Parameter	Result	Sample Reporting Limit	Units
Total Petroleum Hydrocarbons			
Extractable Petroleum Hydrocarbons; C10-C20	170	54	mg/kg
Extractable Petroleum Hydrocarbons; C16-C34	1000	54	mg/kg
Total Extractables	1170	54	mg/kg

Surrogate	Percent Recovery	Recovery Limits
Tricontane	MI	(30 - 130)

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	BMRF-03	**QC Batch:**	000000	**Date Received:**	07/13/2000
EAG ID:	0007-00163-013	**Moisture (%)**	6.6	**Date Prepped:**	
				Date Analyzed:	07/13/2000

Parameter	Result	Sample Reporting Limit	Units
GC Hold Test	**HOLD		

EA GROUP
Laboratories

Workorder:	0007-00163	**Matrix:**	Solid	**Date Sampled:**	07/13/2000
Client ID:	BMC-01	**QC Batch:**	018349	**Date Received:**	07/13/2000
EAG ID:	0007-00163-014	**Moisture (%)**	20	**Date Prepped:**	07/14/2000
				Date Analyzed:	07/17/2000

Parameter	Result	Sample Reporting Limit	Units
Semivolatile Organic Compounds: SW846-8270B			
Acenaphthene	<3600	3600	ug/kg
Acenaphthylene	<3600	3600	ug/kg
Anthracene	<3600	3600	ug/kg
Benzo(a)anthracene	<3600	3600	ug/kg
Benzo(a)pyrene	<3600	3600	ug/kg
Benzo(b)fluoranthene	<3600	3600	ug/kg
Benzo(g,h,i)perylene	<3600	3600	ug/kg
Benzo(k)fluoranthene	<3600	3600	ug/kg
Chrysene	<3600	3600	ug/kg
Dibenz[a,h]anthracene	<3600	3600	ug/kg
Fluoranthene	<3600	3600	ug/kg
Fluorene	<3600	3600	ug/kg
[n]eno[1,2,3-cd]pyrene	<3600	3600	ug/kg
thalene	<3600	3600	ug/kg
nthrene	<3600	3600	ug/kg
ne	<3600	3600	ug/kg

Surrogate	Percent Recovery	Recovery Limits
Nitrobenzene-d5	45.8	(35 - 114)
2-Fluorobiphenyl	DIL	(43 - 116)
p-Terphenyl-d14	54.3	(33 - 141)

EA GROUP
Laboratories

QUALITY CONTROL SUMMARY

EA GROUP
Laboratories

TPH-DRO Method Blank QC Report

EAG ID: MB **Matrix: Soil**
Analysis Date: 7/19/00 **QC Batch: 18381**
Method:SW846-8015M
Associated Samples: 0007-00163-005, 006, 007, 008, 011, 014

Parameter	Result	Reporting Limits	Units
TPH SW846-8015M			
TPH DRO	<10	10	mg/kg

Surrogate	Percent Recovery	Control Limits
C-30	78.2	30-130

EA GROUP
Laboratories

Metals Method Blank QC Report

EAG ID: MB **Matrix:** Soil
Analysis Date: 7/19/00
Method:SW846-6010A
Associated Samples: 0007-00163-001, 002, 003, 004, 006, 007, 010, 011, 013, 014

Parameter	Result	Reporting Limit	Units	Date Prep/Analyzed
Arsenic: SW846-6010A	<25	25	mg/kg	7/17/00-7/19/00
Barium: SW846-6010A	<5	5.0	mg/kg	7/17/00-7/19/00
Cadmium: SW846-6010A	<5	5.0	mg/kg	7/17/00-7/19/00
Chromium: SW846-6010	<5	5.0	mg/kg	7/17/00-7/19/00
Copper: SW846-6010A	<5	5.0	mg/kg	7/17/00-7/19/00
Lead: SW846-6010A	<10	10.0	mg/kg	7/17/00-7/19/00
Nickel: SW846-6010A	<5	5.0	mg/kg	7/17/00-7/19/00
Selenium: SW846-6010A	<25	25	mg/kg	7/17/00-7/19/00
Silver: SW846-6010A	<5	5.0	mg/kg	7/17/00-7/19/00
Zinc: SW846-6010A	<5	5.0	mg/kg	7/17/00-7/19/00

EA GROUP
Laboratories

PAH LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS **Matrix:** Soil
Analysis Date: 07/14/00 **QC Batch:** 18349
Method:SW-846 8270
Associated Samples: 0007-00163-005, 006, 007, 008, 009, 011, 012, 014

Parameter PAH 8270	LCS Percent Recovery	LCSD Percent Recovery	Control Limits Limits	RPD	RPD Control Limits
Phenol	75	77	5-112	3%	0-20
2-Chlorophenol	76	76	23-134	0%	0-20
1,4-Dichlorobenzene	76	76	20-124	0%	0-20
N-Nitrosodiphenylamine	83	63	0-230	27%	0-20
1,2,4- Trichlorobenzene	80	76	44-142	5%	0-20
4-Chloro-3-methylphenol	74	69	22-147	7%	0-20
Acenaphthene	84	82	47-145	2%	0-20
2,4- Dinitrotoluene	73	71	39-139	3%	0-20
4-Nitrophenol	60	57	0-132	5%	0-20
Pentachlorophenol	68	68	14-176	0%	0-20
Pyrene	83	81	52-115	2%	0-20

Surrogate	Percent Recovery	Percent Recovery	Control Limits	RPD	RPD Control Limits
Nitrobenzene-d5	75.75	72.42	(35 - 114)	4%	0-20
2-Fluorobiphenyl	62.68	59.01	(43 - 116)	6%	0-20
p-Terphenyl-d14	85.53	85.46	(33 - 141)	0%	0-20

EA GROUP
Laboratories

BTEX LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS
Analysis Date: 7/17/00
Method: SW-846 8260
Associated Samples: 0007-00163-005, 008, 009

Matrix: Soil
QC Batch: 18309

Parameter	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	RPD	RPD Control Limits
BTEX: SW-846 8260					
1,1-Dichloroethene	113	113	73-115	0%	0-20
Trichlorethene	112	112	69-117	0%	0-20
Benzene	110	110	79-115	0%	0-20
Toluene	104	104	80-114	0%	0-20
Chlorobenzene	96	96	85-117	0%	0-20

Surrogate	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	RPD	RPD Control Limits
1,2-Dichloroethane -d4	92.5	92.5	(80 - 120)	0%	0-20
Toluene-d8	86.9	86.9	(81 - 117)	0%	0-20
Bromofluorobenzene	102	102	(74 - 121)	0%	0-20

EA GROUP
Laboratories

Metals LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE (LCS/LCSD) REPORT

EAG ID: LCS/ LCSDUP **Matrix:** Soil
Analysis Date: 7/14/00
Method:SW846-7471
Associated Samples: 0007-00163-001, 002, 003, 004, 006, 007, 010, 011, 013, 014

Parameter	LCS Percent Recovery	LCSDUP Percent Recovery	Control Limits	RPD	RPD Control Limits	Date Prep/Analyzed
Mercury: SW846-7471	101.5	99	80-120	2%	0-20	7/14/00-7/14/00

EA GROUP
Laboratories

TPH-DRO MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) REPORT

EAG ID: 0007-00163-006 Matrix: Soil
Analysis Date: 7/19/00 QC Batch: 18381
Method:SW846-8015M
Associated Samples: 0007-00163-005, 006, 007, 008, 011, 014

Parameter	MS Percent Recovery	MSD Percent Recovery	Control Limits	RPD	Control Limits
TPH SW846-8015M					
TPH DRO	DIL	DIL	80-120	NA	0-20

Surrogate	Percent Recovery	Percent Recovery	Control Limits	RPD	RPD Control Limits
C-30	DIL	DIL	80-120	NA	0-20

EA GROUP
Laboratories

METALS MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) REPORT

EAG ID: 0007-00163-001 **Matrix:** Soil
Analysis Date: 7/19/00
Method: SW846-6010A
Associated Samples: 0007-00163-001, 002, 003, 004, 006, 007, 010, 011, 013, 014

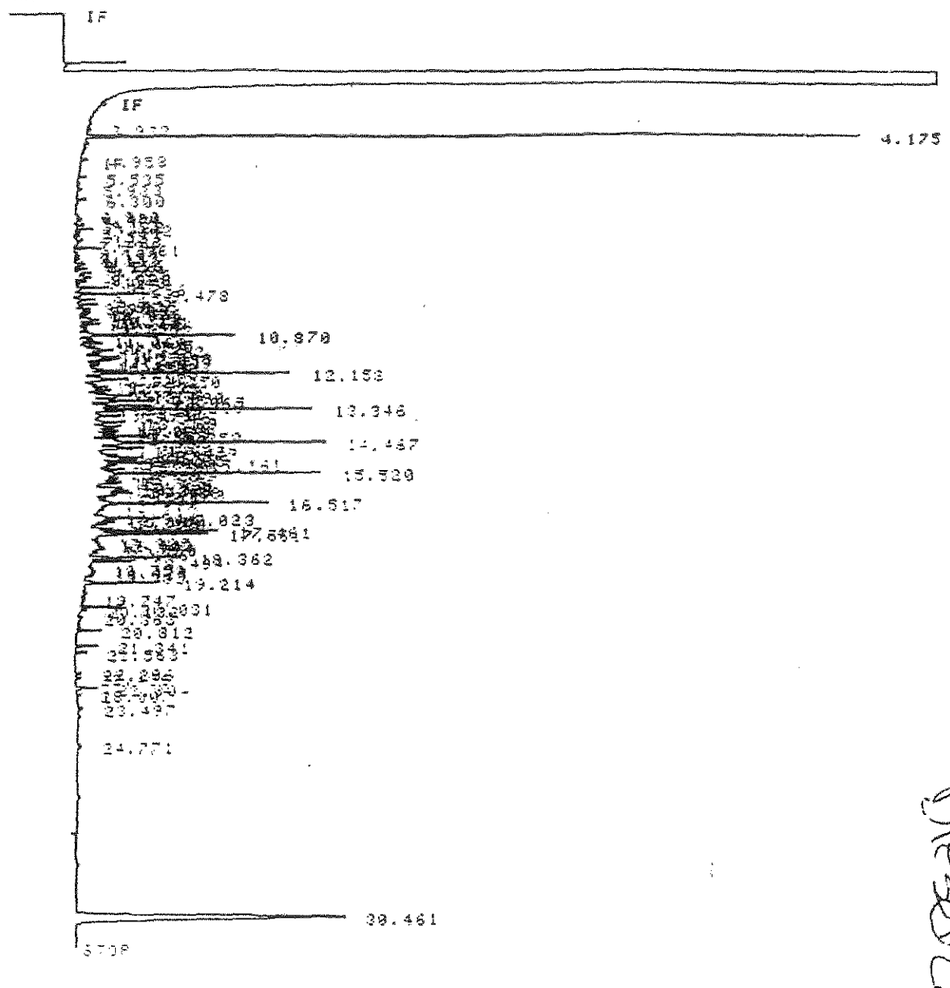
Parameter	MS Percent Recovery	MSD Percent Recovery	Control Limits	RPD	RPD Control Limits	Date Prep/Analyzed
Arsenic: SW846-6010A	85.0	82.0	80-120	4%	0-20	7/17/00-7/19/00
Barium: SW846-6010A	94.0	85.0	80-120	10%	0-20	7/17/00-7/19/00
Cadmium: SW846-6010A	73.0	73.0	80-120	0%	0-20	7/17/00-7/19/00
Chromium: SW846-6010	68.0	72.0	80-120	6%	0-20	7/17/00-7/19/00
Copper: SW846-6010A	83.0	105	80-120	23%	0-20	7/17/00-7/19/00
Lead: SW846-6010A	79.0	79.0	80-120	0%	0-20	7/17/00-7/19/00
Nickel: SW846-6010A	81.0	83.0	80-120	2%	0-20	7/17/00-7/19/00
Selenium: SW846-6010A	74.0	75.0	80-120	1%	0-20	7/17/00-7/19/00
Silver: SW846-6010A	80.0	81.0	80-120	1%	0-20	7/17/00-7/19/00
Zinc: SW846-6010A	81.0	88.0	80-120	8%	0-20	7/17/00-7/19/00

EA GROUP
Laboratories

SAMPLE RAW DATA

LAST BOTTLE 1 --> 2 @
OF SAMPLE WASHES 5 --> BREAK

* SEQ START
Waiting for system readiness
RUN # 2 JUL 17, 2000 10:01:03
START



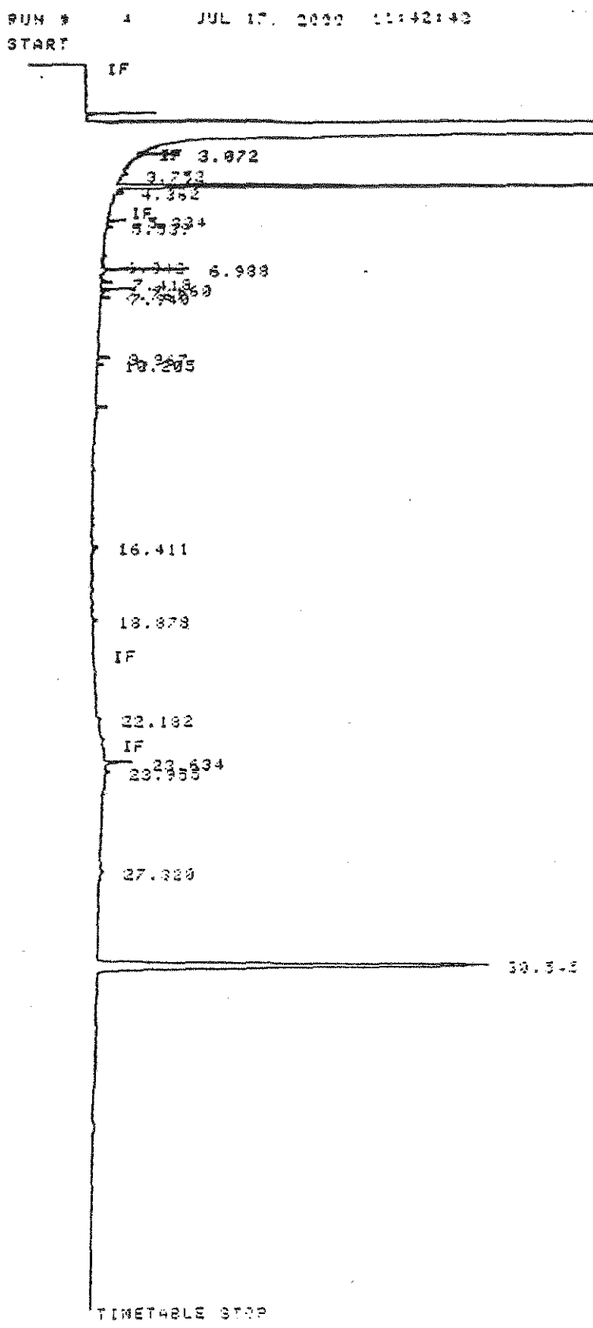
RUN# 2 JUL 17, 2000 10:01:03

SAMPLE NAME: CALCHECK SAMPLE# 2
METHOD NAME: M*DROMH.MET
DIESEL

ESTD-AREA

RT	AREA	TYPE	CAL#	AMOUNT
3.923	1670	BP		.000
4.175	262121	PP		.000
4.956	3157	PP		.000
14.000	3828118	++		.000
23.207	3171	PV		.000
23.497	4436	VV		.000

01285



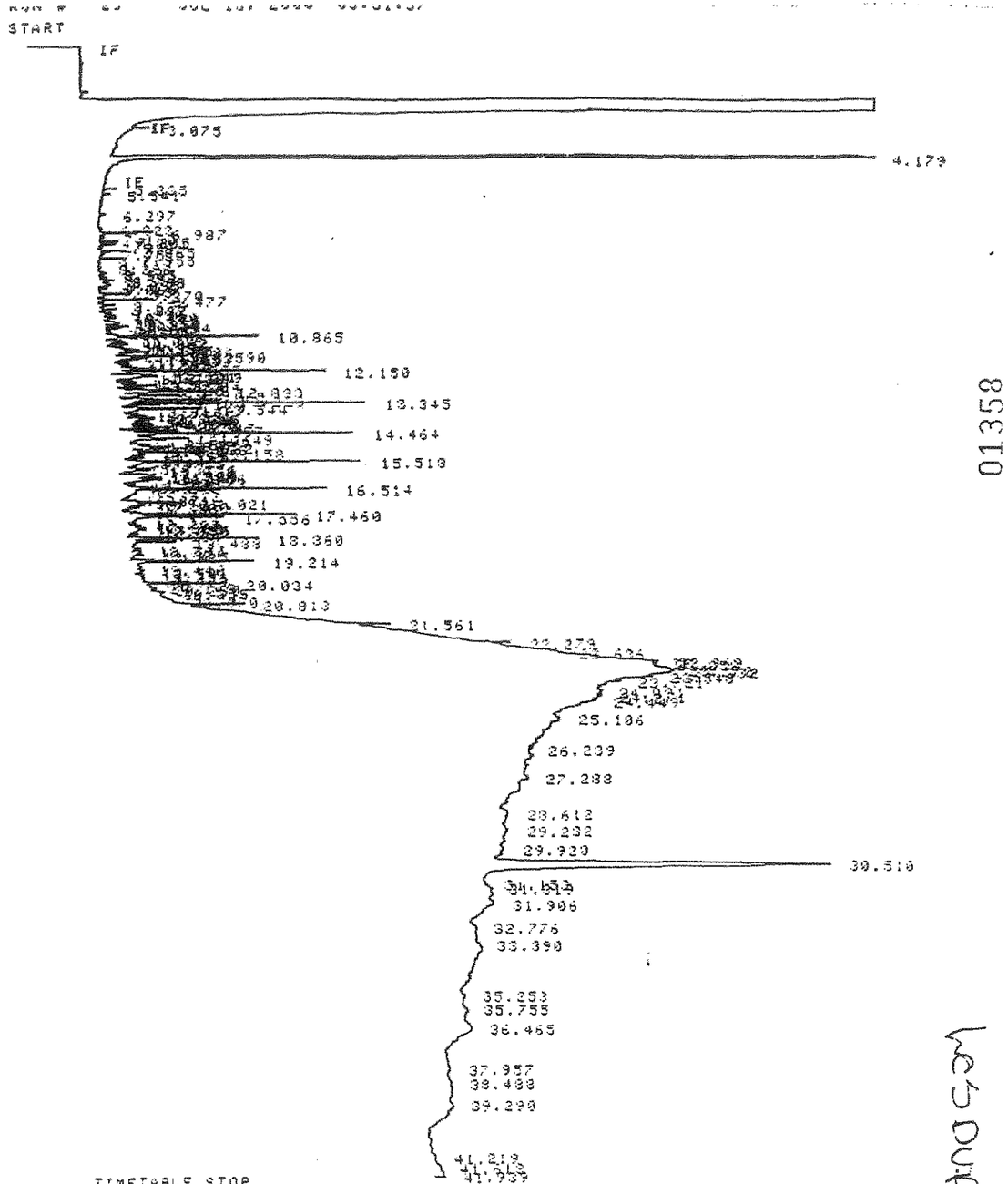
01288

RUN# 4 JUL 17, 2000 11:42:43

SAMPLE NAME: METH BLANK SAMPLE# 4
METHOD NAME: M*ORGMH.MET

ESTD-AREA
RT AREA TYPE CAL# AMOUNT

Method Blank



01358

TIMETABLE STOP

RUN# 23 JUL 13, 2000 05:31:57

SAMPLE NAME: LCS DUP SAMPLE# 23
METHOD NAME: M<ORGMH.MET

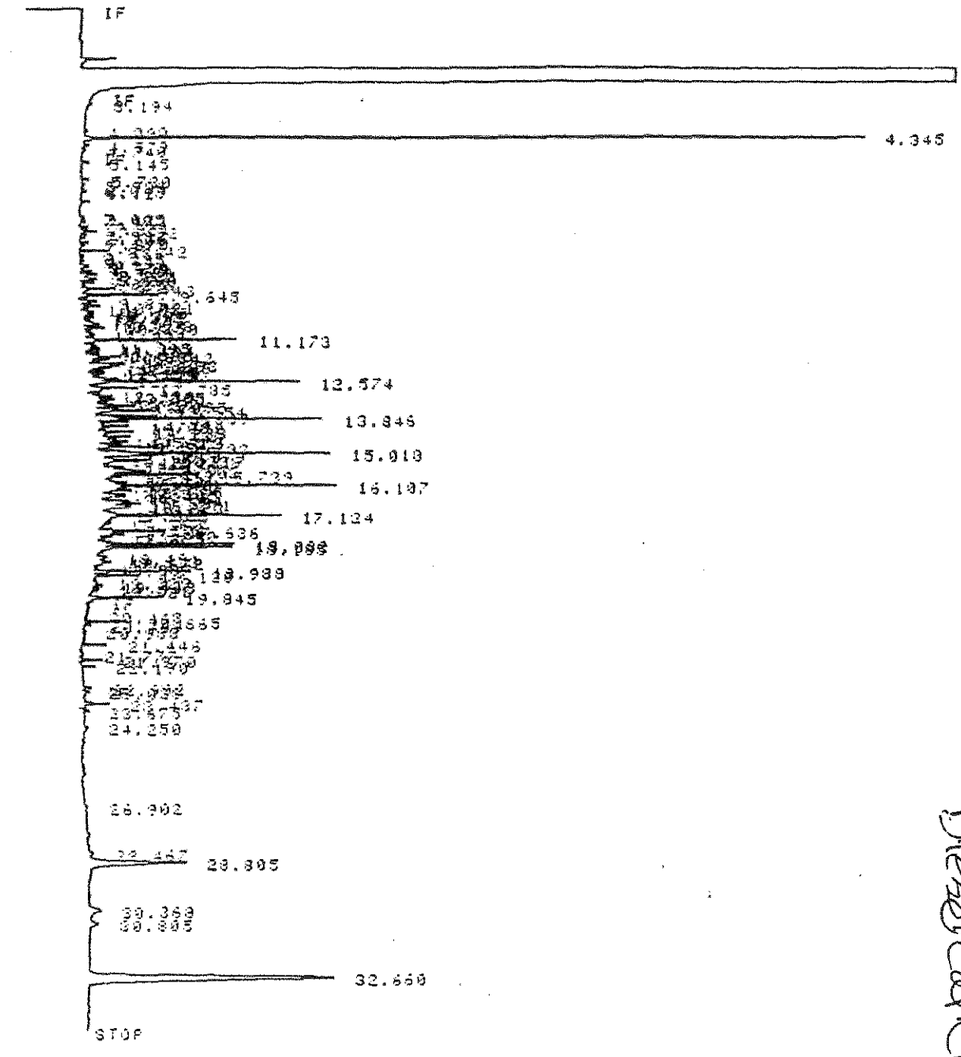
Retest - carryover

LCS DUP

ESTD-AREA

RT	AREA	TYPE	CAL#	AMOUNT
3.075	14977	BP		.900

```
*  SEQ  START
RUN #    3      JUL 19, 2000  11:20:44
START
```




```
RUN#      3          JUL 19, 2000  11:20:44

SAMPLE NAME: CALCHECK          SAMPLE#     2
METHOD NAME: M*DROMH.MET

BREAK

ABORTED

*  EDIT  C-LIB    2

1 = CALIB PARAMETERS
```

Diesel Cal Check 7/20

START

IF

IF

3.938

4.275

4.503

IF

6.432

11.015

12.302

13.501

14.625

15.682

16.678

17.629

18.525

19.381

20.192

23.719

24.835

27.625

28.960

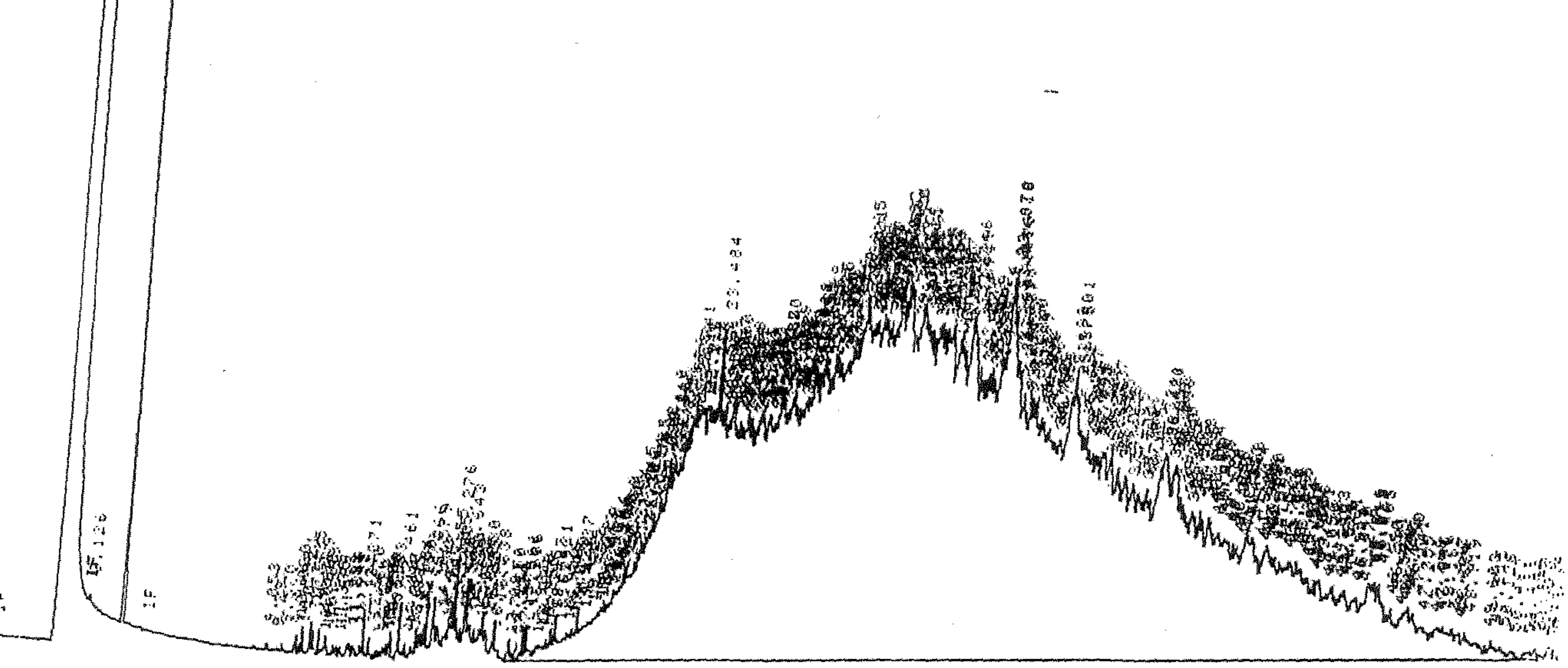
31.006

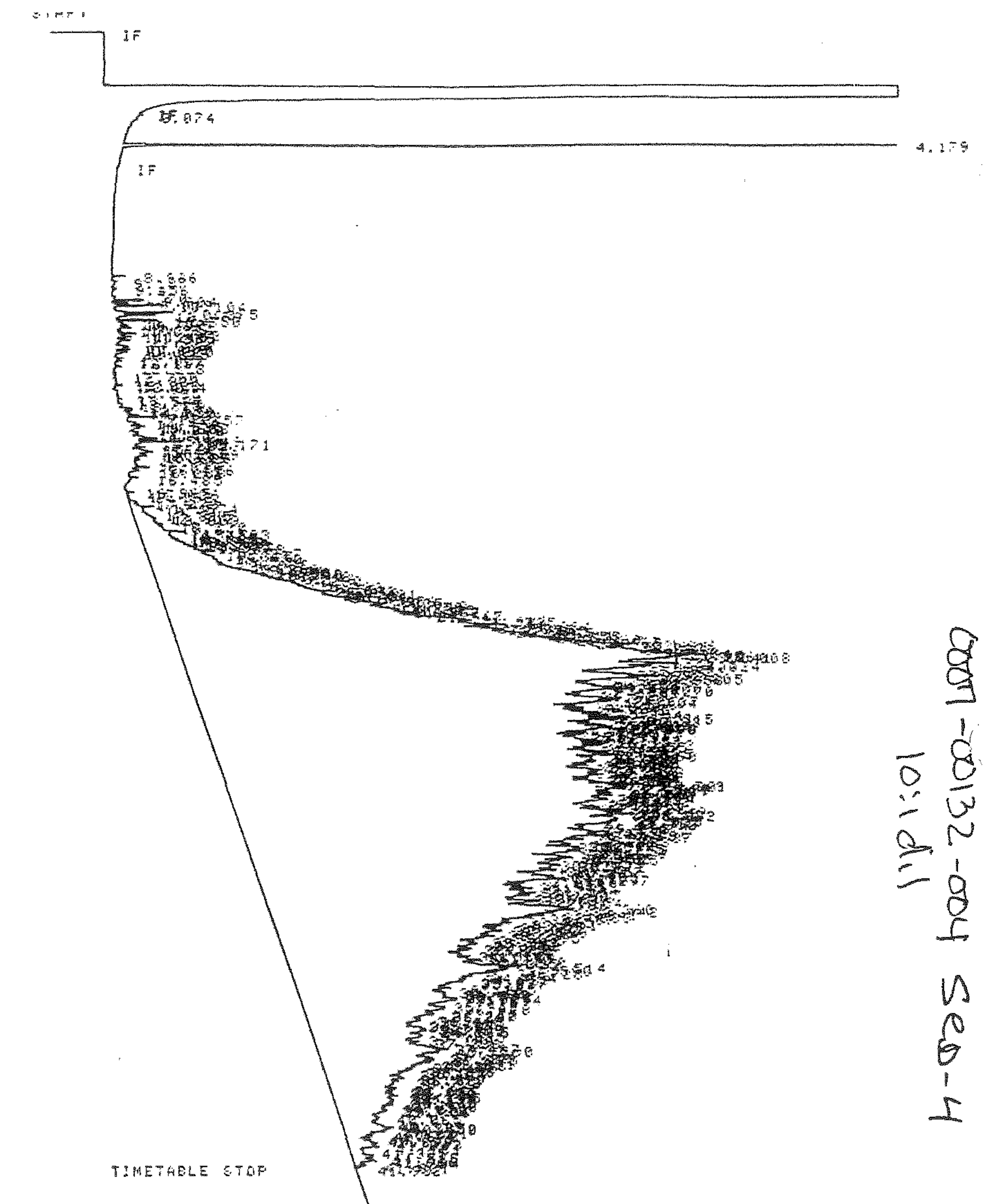
33.145

01402

Hors DNP Report
7/20

0007-00132-002 SED-2
10:1 dil





0001-00132-004 Sed-4
10:1 dil

01306

RUN# 9 JUL 17, 2000 16:24:37

SAMPLE NAME: 132-04 SAMPLE# 9
METHOD NAME: M*DROMH.NET
10:1 dil

MOTOR OIL = 93.0mm = 5200 ug/ml

ESTD-AREA

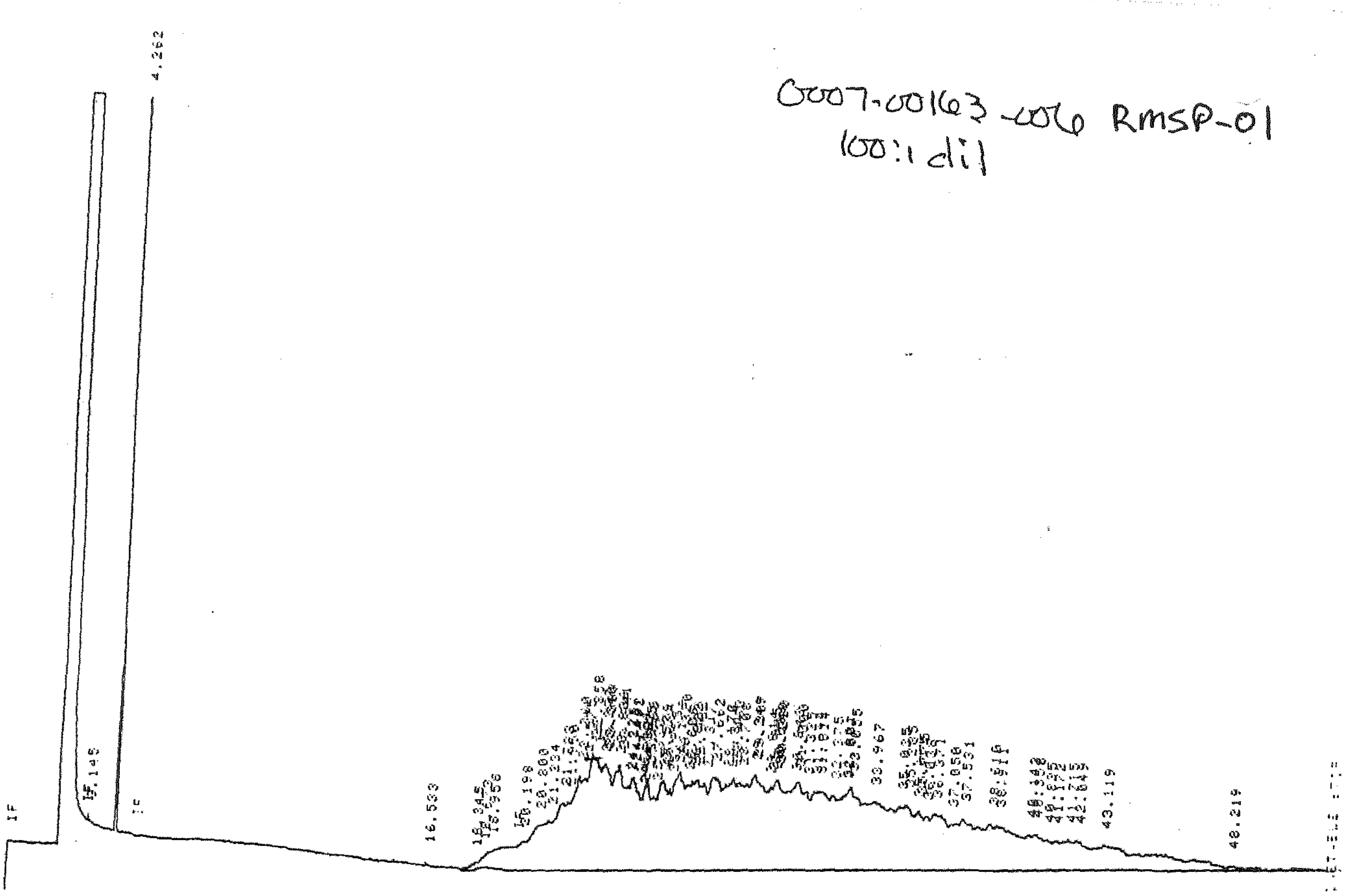
RT	AREA	TYPE	CAL#	AMOUNT
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]

0133

0507-00137-001 WWTA-01
NO DIL

0007-0137-003 WWTM-03
NO OIL

01386


0007-00163-006 RMSP-01
100:1 dil

0507-c0163-c08 DT-02
150:1 dil

0067-00163-014 BMC-01
10:1 dil

01418

VIP INCLUDE

CHAIN OF CUSTODY

PLEASE DO NOT SEPARATE FORMS

EAG WORK ORDER # 23

(INDUSTRIAL) PAGE 1 OF 2

EA GROUP
18 INDUSTRIAL PARK BLVD. MENTOR, OHIO 44060-5314
(440) 951-3514 FAX (440) 951-3774 (800) 875-3514
bsite: www.eagroup-ohio.com customerservice@eagroup-ohio.com

ompany Name	LAST CHANCE
eport Address	1910 FAIRVIEW EAST
ity / State / Zip	Seattle / WA / 98102
illing Address	
ity / State / Zip	
hone / Fax	206 324-4530 / 206 328-5581
eport Attention	Will Abercrombie
roject Name #	7398-00
O. #	

TURNAROUND (√)
RUSH ✓
REPORT BY FAX AS AVAILABLE
DEADLINE 7/19
NORMAL ___

RESULTS (√)
MAIL ✓
FAX ✓

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	MATRIX	COLLECTION TIME	COLLECTION DATE	TPH: GRO - 8015 Mod	TPH: DRO - 8015 Mod	BTEX - 8260	VOCs - 8260	SVOCs - 8270	PAHs - 8270	TCLP	Metals - 6010B + CVAA	HCID	TCLP-6010B + (CVAA) Zn	SEE REVERSE FOR HOLD TIME RESTRICTIONS	SAMPLE REMARKS: CONDITION, ETC....
RMRF02	Soil	7:46	7/13/00								X	X			
RMRF03		7:46	7/13/00								X				
RMRF01		8:20	7/13/00								X	X			
BMRF-02		8:18	7/13/00								X	X			
DT-01		8:32	7/13/00		X	X			X			X			
RMSP-01		8:50	7/13/00		X				X		X	X			
RMSP-01 Matrix		8:50	7/13/00		X				X		X	X			
DT-02		9:09	7/13/00		X	X			X			X			
DT-03		9:09	7/13/00		X	X			X						
BMRF-01		9:43	7/13/00								X	X			
BMSP-01		9:55	7/13/00		X				X		X	X			

	Date/Time	Received by (sign)	Date/Time
Relinquished by (sign)	7/13/00 11:30		7/13/00
Relinquished by (sign)	7/13/00 3:05 pm	SDumrich	7/13/00 3:05P
Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time

Additional Comments:
WITH TO BE FAXED UP COMPLETION
AS AVAILABLE
FINAL REPORT DUE 7-19-00
ELECTRONIC DUE IN EXCEL

WHITE - FILE YELLOW - INVOICE PINK - REPORT GREEN - CUSTOMER

EAGROUP
7118 INDUSTRIAL P... ...VD. MENTOR, OHIO 44060-5314
(440) 951-3514 FAX (440) 951-3774 (800) 875-3514
website: www.eagroup-ohio.com customerservice@eagroup-ohio.com

CHAIN O... USTODY

PLEASE DO NOT SEPARATE FORMS

EAG WORK ORDER #

PAGE 2 OF 2

Company Name: Hart Crowser
Report Address: 1910 Fairview East
City: Seattle State: WA Zip: 98102
Billing Address:
City: State: Zip:
Phone: 206-324-9530 Fax: 206-328-5591
Report Attention: Will Abercrombie
Project Name: 7398-01
P.O. #

TURNAROUND (✓): RUSH ✓ NORMAL ___

RESULTS (✓): MAIL ✓ FAX ✓

SEE REVERSE FOR HOLD TIME RESTRICTIONS

SAMPLE IDENTIFICATION	MATRIX	COLLECTION TIME	COLLECTION DATE	PAHs - 8270	Metals	TPH - DRO			HOLD	SAMPLE REMARKS: CONDITION, ETC....
BMSP-02	Soil	9:55	7/13/00	X						
BMRF-03	↓	10:15	7/13/00		X				X	
BMC-01	↓	10:49	7/13/00	X	X	X			X	

Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time
[signature]	7/13/00 11:10	[signature]	7/13/00 1:15 pm
[signature]	7/13/00 3:35 pm	S Duarte	7/13/00 3:35P

Additional Comments: See Page 1 Comments

- FILE YELLOW - INVOICE PINK - REPORT GREEN - CUSTOMER

ENVIRONMENTAL ASSESSMENT

U.S. Steel Corporation - Cuyahoga Plant
Cuyahoga Heights, Ohio

May 15, 1986

Prepared by

ENGINEERING-SCIENCE, INC.
552 S. Washington Street
Naperville, Illinois 60540

[redacted]

SAMPLING PROGRAM

Description

Three temporary monitoring wells were installed at the toe of the bluff on the Cuyahoga Plant property. The locations of these wells are shown on Figure 3.1. The well borings are included in the appendix. The wells were installed in the flood plain of the Cuyahoga River to determine if priority pollutants are leaching from the materials disposed on the bluff.

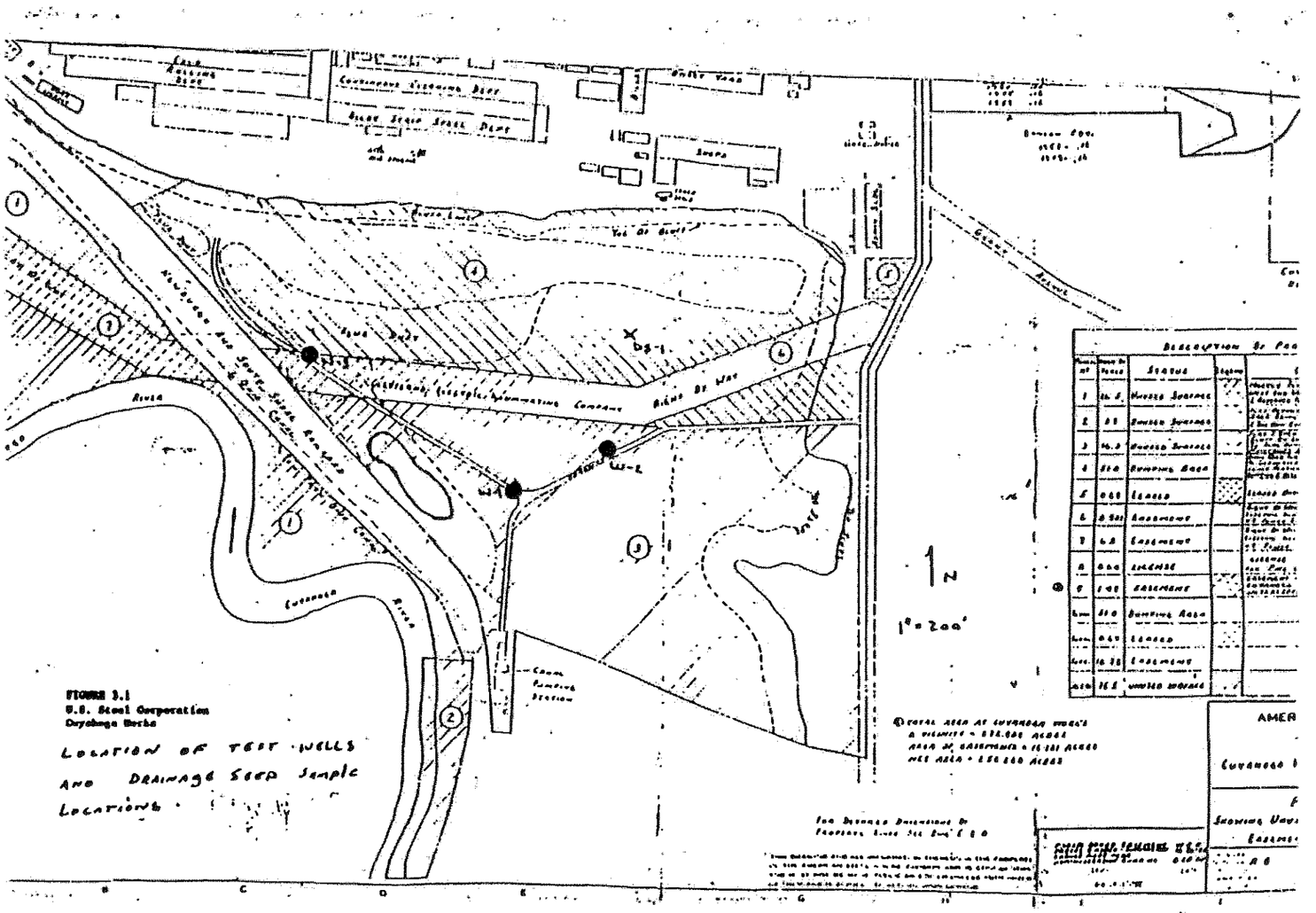


FIGURE 3.1
U.S. Steel Corporation
Cuyahoga Works

LOCATION OF TEST WELLS AND DRAINAGE SEEP SAMPLE LOCATIONS.

Each of the three test wells was installed by the auger method. A 6-inch hollow stem auger was driven below the water table to a maximum depth of 25 feet. After the auger was removed from the hole, a 2-inch threaded PVC casing was installed. The bottom was fitted with a threaded plug and screened (No. 10 slot length). Blank lengths were installed above the screen. A gravel pack was placed around the casing and a layer of bentonite sealed the surface.

Before each well was sampled, it was bailed to remove several casing volumes of water. Samples were taken for wells W-1 and W-2 on March 13, 1986 and sent to the ES laboratory in Atlanta, Georgia. Well W-3, which was located in low permeability sediments and, therefore, had a slow recovery rate, had not recovered enough to take a sample on that date. A partial sample was taken from well W-3 on March 17, 1986 and the remainder was taken on March 18, 1986. While work was being conducted at the toe of the bluff, a drainage seep (DS-1) was noted approximately 100 yards north of well W-2. A sample from this drainage seep was collected and sent to Atlanta on March 13, 1986.

All cleaning of equipment and sampling activities of wells and seeps were completed according to EPA protocol. The hollow stem augers were steam cleaned between borings. A teflon bailer was employed for sampling to insure that any metals detected were from the waters and not from the bailer.

Results

Analysis of the samples for priority pollutants was performed by the ES laboratory in Atlanta, Georgia. Results of the analyses are presented in Table 3.1. Six organic compounds were found at low levels in the samples analyzed. These compounds are acetone, dichloromethane, dimethylphenol, naphthalene, and pyrene. Dichloromethane and acetone are commonly seen at low levels in priority pollutant analyses because of sample contamination in the laboratory. Dichloromethane was also detected in the field blank at levels similar to those seen in the

TABLE 3.1
FIELD SAMPLING RESULTS

Parameter	Concentration (ug/l)				
	Well 1	Well 2	Well 3	Seep	Field Blank
Antimony	ND[1/]	ND	ND	ND	--
Arsenic	10	4	13	5	--
Beryllium	ND	ND	ND	ND	--
Cadmium	ND	ND	ND	ND	--
Chromium	ND	ND	ND	ND	--
Copper	ND	ND	ND	ND	--
Lead	ND	ND	100	ND	--
Mercury	ND	ND	ND	ND	--
Nickel	ND	ND	ND	ND	--
Selenium	0.2	0.5	0.5	0.4	--
Silver	ND	ND	ND	ND	--
Thallium	ND	ND	ND	ND	--
Zinc	10	60	31	36	--
Total Cyanide	33	14	465	7	--
2,4-Dimethylphenol	5.6	ND	ND	ND	ND
Naphthalene	3.0	ND	ND	ND	ND
Pyrene	ND	2.4	ND	ND	ND
Dichloromethane	10	8.8	ND	12	5.9
Acetone	18	ND	28	9.9	ND
Total Phenols	16	10	92	6	--

1/ ND = none detected.

-- indicates analyses were not conducted for this substance in this sample.

samples. Therefore, the levels of acetone and dichloromethane seen in the samples are considered to be the result of field and laboratory methods rather than onsite contamination.

Dimethylphenol at 5.6 micrograms per liter (ug/l) and naphthalene (3.0 ug/l) were detected at trace levels in well 1. Well 2 contained trace amounts of pyrene (2.4 ug/l). The low levels of these compounds seen in the samples would not be expected to cause adverse human health or environmental effects. Phenols were detected in all four samples at concentrations ranging from 6 to 92 ug/l. However, all of these concentrations were well below the EPA criterion for phenols in ground water.

Most metals in the ground water and seep samples occurred at concentrations below the detection limit. When detected, all but one of the metals concentrations were lower than the maximum contaminant levels (MCL's) for drinking water set by the U.S. EPA. In well 3, lead, which has an MCL of 50 ug/l, was seen at the detection limit of 100 ug/l. However, near the detection limit, the laboratory error in measurement increases greatly. Therefore, the lead concentration in well 3 may be below to slightly above the recommended levels in drinking water. Cyanide levels in all samples were below the EPA proposed guidance level for cyanide in drinking water.

Very few compounds were detected were in the priority pollutant analysis. The compounds detected were found in very low concentrations that do not indicate significant contamination at the site.

OBSERVATION WELL INSTALLATION REPORT

Observation Well No. W-1

Project US Steel Corp. Cuy. Wks. 66224. Location US Steel Corp.

Type of Rig D-50 Truck Mounted Auger Installed By HERRON Date 3-12-86 Time 9:30 AM

Method of Installation Hollow Stem Auger

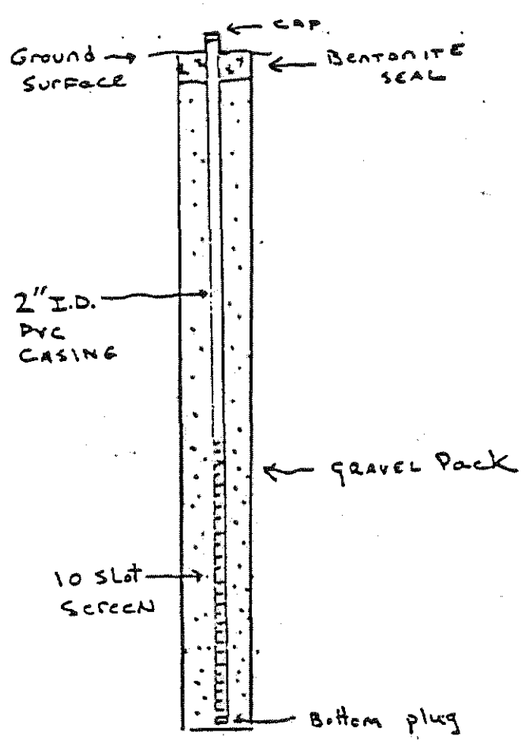
LOG OF BORING AND OBSERVATION WELL

BORING

Depth in ft.	Cored Interval	Description
		0-3' DARK BROWN FILL. SAND, gravel slag, glass
		3-8' gray to Black SILT, Highly CARBONACEOUS POSSIBLY OIL STAINED
		8-16' DK. BROWN clay rich SILT
		16-24' greenish gray SANDY SILT
		TOTAL DEPTH 24'

Test Well

W-1



Remarks

Engineering By

OBSERVATION WELL INSTALLATION REPORT

Observation Well No. W-2

Project US STEEL Corp. Cny. WKS. 66224. Location US Steel Corp.

By Rig D-50 Truck Mounted Auger Installed By HERRON Date 7-12-86 Time 11:30

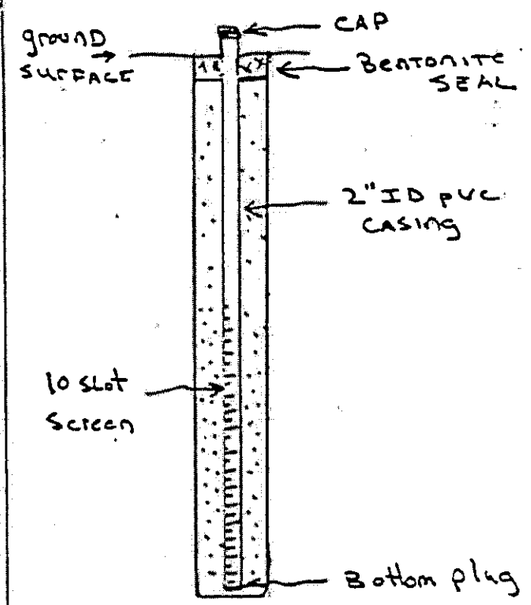
Method of Installation Hollow Stem auger

LOG OF BORING AND OBSERVATION WELL

BORING

Depth in ft.	Cored Interval	Description
		0-6.5' BROWN SLAG, SAND and Gravel
		6.5-11.0' BROWNISH Green SILTY SAND AND GRAVEL
		11-19' yellowish brown SILTY CLAY
		* WET AT 7.5' WATER FLOWING OFF AUGER FLIGHTS between 11-19'
		TOTAL DEPTH 19'

TEST WELL W-2



Inspected By Kevin M. Pa...

OBSERVATION WELL INSTALLATION REPORT

Observation Well No. W-3

oject U.S. Steel Corp. Cuy. WKS. 66224. Location U.S. Steel Corp.

ys 1 Rig D-50 Truckmounted Auger Installed By HERRON Date 3-12-86 Time 2:30 p.m.

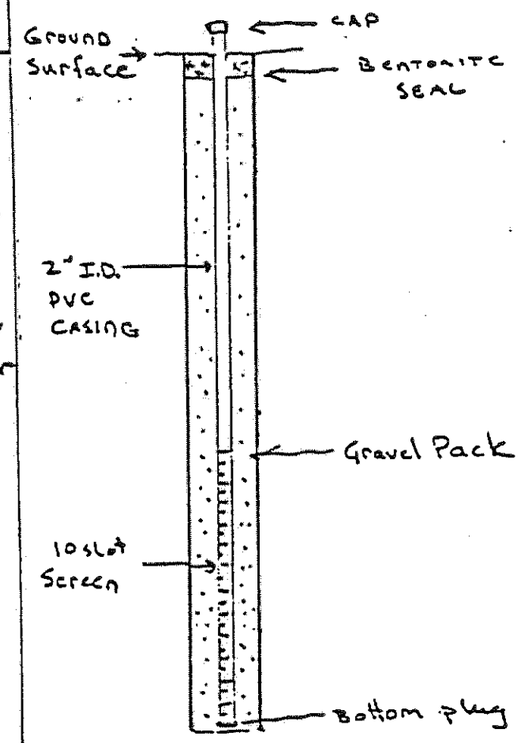
thod of Installation Hollow stem Auger

LOG OF BORING AND OBSERVATION WELL

BORING

Depth in ft.	Cored Interva	Description
		0-11.5' BROWN TO BLACK SLAG, SAND AND brick.
		11.5-12.5' greenish gray silty clay
		12.5-17' BROWNISH GRAY clayey silt, MINOR AMOUNT OF SAND AND GRAVEL(¼")
		16-17' SLAG boulder
		17-24' BROWN SANDY SILT
		TOTAL DEPTH 24'
		# MOIST AT 12.5' WET AT 17.0'

Test WELL W-3



ks

Inspected By Kevin M. Pilcemb

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

REPLY TO THE ATTENTION OF:

December 16, 1985

MEMORANDUM

SUBJECT: Interpretation of Section 3008(h) of the Solid Waste Disposal Act

FROM: J. Winston Porter, Assistant Administrator
Office of Solid Waste and Emergency Response

Courtney M. Price, Assistant Administrator
Office of Enforcement and Compliance Monitoring

TO: Regional Administrators
Regional Counsels
Regional Waste Management Division Directors
Director, National Enforcement Investigation Center

As part of our effort to support case development activities undertaken by United States Environmental Protection Agency personnel, we are transmitting to you guidance on the use of Section 3008(h), one of the corrective action authorities added to the Solid Waste Disposal Act by the Hazardous and Solid Waste Amendments of 1984. As you are aware, Section 3008(h) allows the

Agency to take enforcement action to require corrective action or any other response necessary to protect human health or the environment when a release is identified at an interim status hazardous waste treatment, storage or disposal facility. Because the authority is broad, both with respect to the kinds of environmental problems that can be addressed and the actions that the Agency may compel, we have produced the attached document to provide initial guidance on the interpretation of the terms of the provision and to describe administrative requirements. The document will be revised as case law and Agency policy develop. In addition, the Office of Solid Waste and Emergency Response intends to develop technical guidance on various types of response measures and the circumstances in which they might be appropriate.

In view of the need to issue RCRA permits and to ensure that the substantial number of interim status facilities expected to cease operation in the near future are closed in an environmentally sound manner, we encourage you to use the interim status corrective action authority as appropriate to supplement the closure and permitting process. Questions or comments on this document or the use of Section 3008(h) authority in general can be addressed to Gene A. Lucero, Director of the Office of Waste Programs Enforcement (FTS 382-4814, WH-527) or Fred Stiehl, Associate Enforcement Counsel for Waste (FTS 382-3050, LE-134S).

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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RCRA SECTION 3008(h)

THE INTERIM STATUS CORRECTIVE ACTION AUTHORITY

DECEMBER 16, 1985

REPLY TO THE ATTENTION OF:

I. INTRODUCTION

The Hazardous and Solid Waste Amendments of 1984 have substantially expanded the scope of the RCRA hazardous waste management program. One of the most significant provisions is the interim status corrective action authority, which allows EPA to take enforcement action to compel response measures when the Agency determines that there is or has been a release of hazardous waste at a RCRA interim status facility. Prior to the 1984 Amendments, EPA could require remedial action at interim status facilities by, inter alia, (1) using RCRA ⊥7003 or CERCLA ⊥106 authorities if an imminent and substantial endangerment may have been presented, or (2) when significant ground-water contamination was detected, calling in Part B of the RCRA permit application and requiring corrective action as a condition of the permit. The Amendments added Section 3008(h) to deal directly with environmental problems by requiring clean-up at facilities that have operated or are operating subject to RCRA interim status requirements.

The purpose of this document is to provide preliminary guidelines on the scope of Section 3008(h) and to summarize appropriate procedures. The document will be revised as case law and Agency policy develop. Other relevant RCRA guidances that may be consulted include:

Final Revised Guidance on the Use and Issuance of Administrative Orders under Section 7003 of RCRA, Office of Enforcement and Compliance Monitoring and Office of Solid Waste and Emergency Response-September, 1984.

Issuance of Administrative Orders under Section 3013 of RCRA, Office of Enforcement and Compliance Monitoring and Office of Solid Waste and Emergency Response - September, 1984.

Draft Guidance on Corrective Action for Continuing Releases, Office of Solid Waste and Emergency Response - February, 1985.

Final RCRA Ground-Water Monitoring Compliance Order Guidance, Office of Solid Waste and Emergency Response - August, 1985.

Draft RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, Office of Solid Waste and Emergency Response - August, 1985.

Draft RCRA Preliminary Assessment/Site Investigation Guidance, Office of Solid Waste and Emergency Response - August, 1985.

II. DELEGATIONS OF AUTHORITY

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On April 16, 1985, the Administrator signed delegations enabling the Regional Administrators, the Assistant Administrator for Solid Waste and Emergency Response and the Assistant Administrator for Enforcement and Compliance Monitoring to exercise Section 3008(h) authority. There are three new delegations, 8-31, 32 and 33. The first enables the Regional Administrator or the Assistant Administrator for Solid Waste and Emergency Response to determine that there is or has been a release of hazardous waste at or from a RCRA interim status facility. The second and third delegate the authority to issue orders and sign consent agreements. The authority to refer civil judicial actions is found in Delegation 8-10.

Because Section 3008(h) is quite broad, both with respect to the types of environmental problems that may be addressed and the actions that EPA may compel, delegation of Section 3008(h) authority is subject to limitations. To issue an administrative order or sign a consent agreement, the Regions must obtain advance concurrence from the Director, Office of Waste Programs Enforcement, Office of Solid Waste and Emergency Response and must notify the Associate Enforcement Counsel for Waste, Office of Enforcement and Compliance Monitoring. Until the Agency as a whole gains experience in using the new authority, this requirement is necessary to ensure that sound precedent is established and national program priorities are addressed. The Office of Waste Programs Enforcement intends to waive advance concurrence, however, for those Regions that demonstrate sufficient experience in using Section 3008(h) as indicated by the

number and quality of ⊥3008(h) orders submitted for review in the next six months. Civil judicial actions will be handled in accordance with existing procedures for referrals.

To expedite ⊥3008(h) actions, the Regions should establish procedures for drafting and reviewing orders and referrals and clearly delineate the roles and responsibilities of Regional RCRA enforcement and program personnel (including CERCLA personnel as necessary) and the Office of Regional Counsel in those processes. Draft orders should be sent to the Chief, Compliance and Implementation Branch, RCRA Enforcement Division, Office of Waste Programs Enforcement.

Headquarters is committed to conducting timely review of ⊥3008(h) orders. To avoid the delays associated with discussion and review of rough drafts, we ask that orders be in "near final" form when they are submitted. Generally, the orders will be examined to determine whether (1) the elements of proof are adequately defined and documented, (2) the response to be compelled is practicable and environmentally sound, and (3) the action supports national RCRA program goals. Written comments or concurrence will be provided to the Regions within ten working days of receipt.

III. SCOPE OF SECTION 3008(h)

Section 3008(h) provides:

"(1) Whenever on the basis of any information the Administrator

determines that there is or has been a release of hazardous waste into the environment from a facility authorized to operate under Section 3005(e) of this subtitle, the Administrator may issue an order requiring corrective action or such other response measure as he deems necessary to protect human health or the environment, or the Administrator may commence a civil action in the United States district court in the district in which the facility is located for appropriate relief, including a temporary permanent injunction.

(2) Any order issued under this subsection may include a suspension or revocation of authorization to operate under Section 3005(e) of this subtitle, shall state with reasonable specificity the nature of the required corrective action or other response measure, and shall specify a time for compliance. If any person named in an order fails to comply with the order, the Administrator may assess, and such a person shall be liable to the United States for, a civil penalty in an amount not to exceed $25,000 for each day of noncompliance with the order."

To exercise the interim status corrective action authority, the Agency must first have information that there is or has been a release of hazardous waste to the environment at or from an interim status facility. Second, the corrective action or other response measure, in the judgement of the Agency, must be necessary to protect human health or the environment. Key terms are discussed below in greater detail.

"Whenever on the basis of any information the Administrator determines..."

The opening clause of Section 3008(h) authorizes the Agency to make the determination that there is or has been a release of hazardous waste into the environment on the basis of 'any information'. Appropriate information can be obtained from a variety of sources, including data from laboratory analyses of soil, air, surface water or ground water samples, observations recorded during inspections, photographs, and facts obtained from facility records.

The reference to a determination by the Administrator should be considered in the context of the term 'any information'. To satisfy any requirement imposed by the statute, an order should contain a specific determination. A civil referral should also be based on a written determination that there is or has been a release.

"...that there is or has been a release...into the environment..."

The trigger for issuing 3008(h) orders and initiating civil referrals is the existence of information that there is or has been a release, which is a lower threshold than the showing of 'substantial hazard' under RCRA Section 3013 or 'imminent and substantial endangerment' under RCRA Section 7003 or CERCLA Section 106. While the statute does not define the term 'release', the Agency believes that, given the broad remedial

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purposes of Section 3008(h), the term should encompass at least as much as the definition of release under CERCLA. See 42 U.S.C. 9601(22). Therefore a release is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. The exemptions described in the CERCLA definition are considered inapplicable or inappropriate for RCRA purposes, however, and are not included in the RCRA definition.

The term 'environment' is also broad. The legislative history for Section 3008(h), which discusses use of the authority to respond to releases to various environmental media, makes it clear that Section 3008(h) is not limited to a particular medium. H. Rep. No. 1133, 98th Cong., 2d Sess. 111-112 (1984). The Agency will use Section 3008(h) to address releases to surface waters, groundwater, land surface or subsurface strata and air.

It is not necessary to have actual sampling data to show a release. An inspector may find other evidence that a release has occurred, such as a broken dike at a surface impoundment. Less obvious indications of release might also be adequate to make the determination. For example, the Agency could have sufficient information on the contents of a land disposal unit, the design and operating characteristics of the unit, and the hydrology of the area in which the unit is located to conclude that there has been a release to groundwater.

In addition to on-site information gathering undertaken specifically to support a 3008(h) action, other sources that may

provide information on releases include:

Inspection Reports.

RCRA Part A and Part B permit applications.

Responses to RCRA §3007 information requests.

Information obtained through RCRA §3013 orders.

Notifications required by CERCLA §103.

Information-gathering activities conducted under CERCLA §104.

Informants' tips or citizens' complaints corroborated by supporting information.

A determination that there is or has been a release does not require that specific amounts of hazardous waste or hazardous constituents be found in the environment. Quantities or concentrations of hazardous wastes or hazardous constituents should be considered when ordering interim or complete corrective actions, however, because response actions compelled by the Agency must be necessary to protect human health or the environment.

"...of hazardous waste..."

In contrast to many Subtitle C provisions, the language of

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Section 3008(h) refers to "hazardous waste" rather than "hazardous waste identified or listed under Subtitle C". The Agency believes that the omission of a reference to wastes listed or identified at 40 CFR Part 261 was deliberate, and Congress did not intend to limit Section 3008(h) only to materials meeting the regulatory definition of hazardous waste. The Conference Report specifically endorses the use of corrective action orders to respond to releases of hazardous constituients. H. Rep. No. 1133, 98th Cong., 2d Sess. 111 (1984). The legislative history also indicates that the new authority should be at least as broad as the corrective action authority in the federal RCRA permit program. Id. At 111-112. Those regulations address both hazardous waste and hazardous constituients. Moreover, Section 3004(u), the 'Continuing Releases' provision requiring clean-up of releases from any solid waste management unit at a treatment, storage or disposal facility seeking a RCRA permit, applies to releases of hazardous constituients as well as releases of listed and characteristic wastes. H. Rep. No. 198, 98th Cong., 1st Sess. 60 (1983). Therefore, Section 3008(h) may also be used to compel response measures for releases of hazardous constituients from hazardous or solid waste.

"Hazardous constituents" are the substances listed in Appendix VIII to 40 CFR Part 261. H. Rep. No. 198, 98th Cong., 1st Sess. 60-61 (1983). According to the legislative history for Section 3004(u), which is read in conjunction with Section 3008(h), the term also includes Appendix VIII hazardous constituents released from solid waste and hazardous constituents that are reactor by-products. S. Rep. No. 284, 98th Cong., 1st

Sess. 32 (1983). It should be noted that the legislative history for the new underground storage tank provisions states that Section 3008 is not applicable to underground storage tanks regulated under Subtitle I. Such releases may be addressed by Section 7002 and Section 7003 authorities, however. H. Rep. No. 1133, 98th Cong., 2d Sess. 127 (1984). Section 3008(h) remains applicable to releases from underground tanks containing hazardous or solid waste subject to Subtitle C provisions.

"...from a facility..."

For interim status corrective action purposes, EPA intends to employ the definition of 'facility' adopted by the Agency in the corrective action program for releases from permitted facilities. The preamble to the permitting requirements for land disposal facilities indicates that the term 'facility' refers to..."the broadest extent of EPA's area jurisdiction under Section 3004 of RCRA...[meaning] the entire site that is under the control of the owner or operator engaged in hazardous waste management." 47 FR 32288-89 (July 26, 1982). See also the Final Codification Rule. 50 FR 28712 (July 15, 1985). Therefore, the definition of facility encompasses all contiguous property under the owners control.

The permit program, as amended by Section 3004(u), requires corrective action for releases of hazardous waste and hazardous constituents from solid waste management units at a facility. EPA interprets 'solid waste management unit' to include any discernable unit used for waste management. See 50 FR 28712 (July

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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REPLY TO THE ATTENTION OF:

15, 1985). Since the legislative history describes the interim status corrective action authority as a "supplement" to permitting authority and indicates that the interim status authority should be at least as broad as the permit authority, Section 3008(h) clearly authorizes EPA to require corrective action for any release of hazardous waste from discernable waste management units. The Agency's authority to use Section 3008(h) to address releases from solid waste management units as well as hazardous waste management units is discussed in the Final Codification Rule. 50 FR 28716 (July 15, 1985).

The language of Section 3008(h), however, suggests that Congress did not intend to limit EPA's authority to releases from discernable units. Unlike Section 3004(u), Section 3008(h) broadly authorizes corrective action for any release from a "facility". It does not require the Agency to find that a release originated in a discernable waste management "unit".

The legislative history supports this interpretation. Prior to enactment of Section 3008(h), the RCRA regulations required corrective action for releases to groundwater from permitted 'regulated units' (surface impoundments, waste piles, landfills and land treatment areas that received Subtitle C hazardous waste after a specified date). 40 CFR 264.100 and 40 CFR 264.90. Congress criticized this approach as too slow and too limited, however, and created the interim status corrective action authority to "deal directly with an ongoing environmental problem at interim status facilities." H. Rep. No. 1133, 98th Cong., 2d Sess. 110-112 (1984). Moreover, Congress clearly did not intend

the authority to be limited to the scope of the existing permit program. For instance, the legislative history lists several examples of releases outside the regulatory program for which a 3008(h) action is appropriate, including releases from waste management units not required to undertake corrective action or otherwise exempt from RCRA regulations and releases, such as air emissions, to environmental media other than groundwater. Id. at 112.

The text of the statute, the broad remedial purpose, and the clear intent to authorize action beyond the scope of the permit regulations support the position that Section 3008(h) authorizes EPA to address all types of releases of hazardous waste within a facility. As discussed previously, the term 'hazardous waste' encompasses 'hazardous constituents' from both hazardous and solid waste.

Section 3008(h) will also be used to address releases that have migrated from the facility. New Section 3004(v), which provides that EPA may issue orders requiring corrective action for releases that have crossed the facility boundary if the permission of the owner of the affected property can be obtained, supports the agency's interpretation that such releases are subject to action under Section 3008(h). See also the Final Codification Rule. 50 FR 28716 (July 15, 1985).

In a 3008(h) order or judicial referral, Agency personnel should describe hazardous and solid waste management units within the boundary of the facility and hazardous and solid wastes (and

associated hazardous constituents) managed by the facility in addition to information indicating that a release has occurred.

Since Section 3008(h) unequivocally authorizes EPA to address releases from units, the order or complaint should establish some link between the hazardous constituents in a release and the hazardous or solid wastes in waste management units where possible. For example, the findings of facts might state that the facility treats, stores or disposes of certain listed Subtitle C wastes, that those wastes were listed because they contain the hazardous constituents cited in Appendix VII to 40 CFR Part 261 and that some or all of those constituents have been found in the environment, thereby indicating a release.

"...authorized to operate under Section 3005(e)..."

This clause encompasses several classes of hazardous waste treatment, storage and disposal facilities. First, facilities that have met each requirement for obtaining interim status in a timely manner are subject to Section 3008(h). With respect to those facilities brought into the hazardous waste management system when the Phase I RCRA rules went into effect, to establish interim status EPA must demonstrate that: (1) the facility was in existence on November 19, 1980, and; (2) the owner or operator complied with the requirements of Section 3010(a), regarding notification of hazardous waste activity, and; (3) the owner or operator submitted a Part A application in accordance with 40 CFR 270.10. As to those facilities in existence on the date of regulatory or statutory changes that render the facility subject to the requirement to obtain a permit under Section 3005, to

establish interim status the Agency must demonstrate (1) that the facility was in existence on the appropriate date and (2) submitted a Part A permit application in accordance with the requirements of 40 CFR 270.10. If a statutory or regulatory change requires notification under Section 3010, EPA must also establish that the facility submitted the notification.

Second, Section 3008(h) applies to facilities that treat, store, or dispose of hazardous waste, but have not actually obtained interim status because the owner or operator did not fully comply with the requirements to submit a Section 3010 notification and/or a Part A. Such facilities have been allowed to operate in accordance with a formal enforcement action or an Interim Status Compliance Letter requiring compliance with Part 265 standards. Furthermore, the owners or operators are not relieved of the duty to apply for and obtain a final RCRA permit. See e.g., the notice of implementation and enforcement policy for loss of interim status under Section 3005(e), 50 FR 38947-48 (September 25, 1985). The Agency believes that Congress intended the interim status corrective action authority to apply to such facilities. The legislative history for Section 3008(h) supports this position by making it clear that the authority can be used to address releases from units that do not have interim status, such as wastewater treatment tanks. H. Rep. No. 1133, 98th Cong., 2d Sess. 112 (1984).

Third, EPA considers Section 3008(h) to be applicable not only to owners or operators of facilities in the above two categories but also to units or facilities at which active

operations have ceased and interim status has been terminated to 40 CFR Part 124 or Sections 3005 and 3005(e)(2) of RCRA. Section 3008(h) specifically provides that the interim status corrective action orders may include a suspension or revocation of the authority to operate under interim status, as well as any other response necessary to protect human health or the environment. Consequently, a corrective measures program can be imposed under Section 3008(h), even if a facility's interim status has been taken away as a result of an interim status corrective action order. The Agency also believes that Section 3008(h) can be used to compel responses to releases at facilities that lost interim status prior to a 3008(h) action. This approach is consistent with Congressional intent to assure that significant environmental problems are addressed at facilities that treat, store or dispose of hazardous waste but do not have a final RCRA operating or post-closure permit. H. Rep. No. 1133, 98th Cong., 2d Sess. 110-112 (1984).

Where a State is authorized to administer the RCRA program, the requirements for obtaining the State's equivalent to interim status may differ from those of the federal program. In authorized States that do not duplicate the federal procedures, hazardous waste treatment, storage and disposal facilities that have not been granted or denied a final RCRA permit are generally considered interim status facilities. Land disposal facilities that were issued State permits after November 8, 1984 but have not yet received the federal portion of the permit applicable to continuing releases under Section 3004(u) are treated for purposes of this guidance in the same manner as interim status facilities.

Similarly, hazardous waste underground injection wells that did not receive a UIC permit prior to that date will also be treated in the same manner as interim status facilities. See the notice of implementation and enforcement policy for loss of interim status under Section 3005(e). 50 FR 38947 (September 25, 1985).

"...Corrective action or such other response measure as he deems necessary to protect human health or the environment..."

Prior to the Hazardous and Solid Waste Amendments of 1984, the term "corrective action", in the RCRA regulatory context, referred to removal or treatment in place of Appendix VIII hazardous constituients in groundwater. 40 CFR 264.100. Section 3008(h) is not restricted to remedial action for ground-water contamination, however. The statutory language and the legislative history indicate that a wide range of responses to releases to all media from waste management activities may be compelled. Financial assurance for any response measure may also be required.

The authority can be used to require implementation of one or more stages of a clean-up program, such as:

Containment, stabilization or removal of the source of contamination,

Studies to characterize the nature and extent of contamination and to assess exposure and health and environmental effects,

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Identification and evaluation of remedies,

Design and construction of the chosen remedy,

Implementation of the remedy, and

Monitoring to determine the effectiveness of the remedy.

For example, a ⊥3008(h) order might require that the owner or operator conduct a study to characterize the nature and extent of contamination, then select a remedy and submit a corrective action plan to EPA. The Agency and the owner or operator would then confer on the plan and amend the order to reflect any modifications. H. Rep. No. 1133, 98th Cong., 2d Sess., 111 (1984). Because a study on the nature and extent of contamination and the selection and design of a remedy may require a significant amount of time, Section 3008(h) should be employed to require interim measures as necessary to protect human health and the environment prior to completion of the study and selection of a remedy. Examples of interim remedies that could be compelled include removal of the waste or containment of the sources of the contamination by lining a unit or erecting dikes. In some instances, preliminary pumping and treating of affected groundwater may be appropriate.

While the information needed to make a determination that there is or has been a release is minimal, more information may be

needed to justify a specific interim or full remedy. The Administrator can require "corrective action or such other response measures as he deems necessary to protect human health or the environment." To show that a response may be necessary to protect human health or the environment, the present or potential threat posed by the release should be described. The Agency may consider a variety of factors, including the quantity of hazardous waste; the nature and concentration of hazardous constituents or other hazardous properties exhibited by the waste; the facility's waste management practices; potential exposure pathways; transport and environmental fate of hazardous constituents; humans or environmental receptors that might be exposed; the effects of exposure, and; any other appropriate factors. To compel corrective action investigations or studies, only a general threat to human health or the environment needs to be identified.

IV. ADMINISTRATIVE ACTIONS

Under Section 3008(h), the Agency can issue administrative orders or commence a civil judicial action. The decision to pursue an administrative or judicial remedy must be made on a case-by-case basis since each approach has advantages and disadvantages. An administrative order, for instance, can usually be issued quickly, while preparation for a judicial action may be more time-consuming and must be referred to the Department of Justice. On the other hand, a judicial order or consent decree can be enforced readily since the court already has jurisdiction of the matter.

EPA may issue a ⊥3008(h) administrative order to require corrective action or any response necessary to protect human health or the environment. The order may include a suspension or revocation of authorization to operate. If any person named in the order fails to comply with the order, the Agency may impose a civil penalty not to exceed $25,000 for each day of noncompliance.

Notice to States

Section 3008(h) does not require that States be given notice of an impending action. To ensure that the Agency is fully informed of relevant facts and, in view of the Federal/State relationship, consultation with the State should usually precede an EPA action. To avoid misunderstandings, reasonable notice should be given to the State when an action is taken. The notice should include the location and a description of the facility, the names and addresses of the owners and operators, the conditions requiring a response and a description of the action that EPA will require.

Elements of Orders

Because it is the focal point in all proceedings subsequent to its issuance, the initial order must be as complete as possible. Failure to develop an adequate document may have adverse consequences if the Agency seeks judicial enforcement. All ⊥3008(h) orders should contain the following general elements:

A statement of the statutory basis for the order.

Factual allegations showing that there is or has been (1) a release (2) of hazardous waste or hazardous constituents (3) into the environmental (4) at or from an interim status facility. Facts indicating that the response is necessary to protect human health or the environment should also be presented.

A determination, based on the factual allegations, that there is or has been a release of hazardous waste or hazardous constituents to the environment from an interim status facility.

An order that clearly identifies the tasks to be performed, and a schedule of compliance accompanied by appropriate reporting and approval requirements.

A statement informing the respondent that he has a right to request a hearing within 30 days of issuance concerning any material fact in the order or the terms of the order.

A notice of opportunity for an informal settlement conference. It is the Agency's policy to encourage settlement of 3008(h) actions through informal discussions. the respondent should be cautioned, however, that a request for a conference does not affect the 30 day period for requesting a hearing.

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A statement that EPA may assess penalties not to exceed $25,000 per day of non-compliance with the order.

It may be appropriate to include a provision for stipulated penalties in orders on consent. Such a provision, however, should be drafted to make it clear that the stipulated penalty is not EPA's sole remedy and that Agency has not waived its statutory authority to assess penalties under Section 3008(h)(2). It is recommended that the Regions pursue judicial referrals to impose penalties for noncompliance with a ⊥3008(h) administrative order rather than issuing a subsequent order for penalties.

Releases from liability and covenants not to sue may be sought be parties negotiating ⊥3008(h) orders. These provisions terminate or seriously impair the Federal Government's right of action against a party. In general, the interim CERCLA Settlement Policy (December 5, 1984) may be followed. Releases generally will not be appropriate, however, where the extent of contamination, the reliability of the remedy or long-term operation and maintenance requirements are uncertain. If provided, they should be narrowly drawn. In addition, EPA personnel should exercise particular care in drafting such provisions to ensure that they do not restrict the operation and enforcement of the on-going RCRA regulatory program. Moreover, the order should also contain a provision reserving the Agency's right to take additional action under RCRA and other laws. For example, EPA should reserve the right to expend and recover funds under CERCLA; to bring imminent and substantial endangerment

actions under RCRA §7003 and CERCLA §106; to assess penalties for violations of and require compliance with RCRA requirements under §3008(a); to address releases other than those identified in the order; to require further action as necessary to respond to the releases addressed in the order, and; to take action against nonparties if appropriate.

Hearing Requirement

To issue a unilateral §3008(h) order, EPA must comply with the requirements of Section 3008(b) with respect to an opportunity for a hearing. 130 Cong. Rec. S9175 (daily ed. July 25, 1984). Although procedures for §3008(a) administrative actions have been established by regulation (See 40 CFR part 22), those regulations are not legally applicable to §3008(h) actions. Hearing procedures for §3008(h) actions are under development. Until formal guidance is available, a Region that intends to issue a unilateral order should contact the Office of Waste Programs Enforcement, Office of Solid Waste and Emergency Response.

Development and Preservation of the Administrative Record

§3008(h) orders might be reviewed in administrative or judicial proceedings. Therefore, it is essential that information required by the statute and all other relevant information or documents obtained by the Agency be compiled in an administrative record, preserved and readily retrievable. The EPA official initiating the action should maintain a file that contains the following:

EPA investigative records, such as inspection reports, sampling and analytical data, copies of business records, photographs, etc.;

Reports and internal Agency documents used in generating or supporting the enforcement action, including experts witness statements;

Copies of all documents filed with the Regional Hearing Clerk or the Presiding Officer;

Copies of all relevant correspondence between EPA and the respondent;

Written records of conferences and telephone conversations between EPA and the respondents, and;

Copies of all correspondence between EPA and State or other federal agencies pertaining to the enforcement action.

V. CIVIL JUDICIAL ACTION

Under Section 3008(h), EPA may initiate civil judicial action to compel appropriate relief, including a temporary or permanent injunction, or to enforce a 3008(h) administrative order. As noted previously, the decision to pursue administrative or judicial remedies will be made on a case-by-case basis.

Generally, however, a civil judicial action may be preferable to issuance of an administrative order in the following types of situations:

A person is not likely to comply with an order or has failed to comply with a ⊥3008(h) order.

A person's conduct must be stopped immediately to prevent irreparable injury, loss or damage to human health or the environment.

Long-term, complex and costly response measures will be required. (Because compliance problems are more likely to arise during implementation of these actions than while carrying out a simple, short-term action, it may be better to have the matter already before the court for ease of enforcement.)

Other factors that could be considered include the value of a favorable decision as precedent and the need to deter noncompliance by other potential targets for EPA enforcement action under Section 3008(h).

A request to file a civil judicial action must be referred by the Assistant Administrator for Enforcement and Compliance Monitoring to the Department of Justice. The procedures that Agency personnel should follow to develop a referral and support litigation are described in the RCRA/CERCLA Case Management Handbook (August, 1984) and the RCRA Compliance/Enforcement

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VI. USE OF SECTION 3008(h) IN RELATION TO PERMITTING, CLOSURE AND OTHER AUTHORITIES

REPLY TO THE ATTENTION OF:

RCRA Permits

The pre-HSWA regulations applicable to corrective action at permitted facilities deal only with a remedial program for treatment in place or removal of groundwater contaminated by a release from a 'regulated unit'. (Prior to HSWA, the term 'regulated unit' meant a surface impoundment, landfill, land treatment unit or waste pile that operated after January 26, 1983. Enactment of new Section 3005(l), which provides that the Part 264 groundwater monitoring, unsaturated zone monitoring and corrective action requirements are applicable at the time of permitting to landfills, surface impoundments, waste piles and land treatment units that received Subtitle C hazardous wastes after July 26, 1982, necessitated a corresponding change in the definition of regulated unit). Enactment of Section 3004(u) enlarged the universe of units subject to corrective action at RCRA facilities by requiring that a facility seeking a RCRA permit address all releases of hazardous waste and hazardous constituents at any hazardous or solid waste management unit. In addition to increasing the number and kinds of units subject to corrective action, EPA will use the Section 3004(u) authority to address releases to air, land and surface waters as well as to groundwater. Furthermore, Section 3004(v) allows EPA to require corrective action beyond the facility boundary where necessary to

protect human health and the environment unless the facility owner or operator is unable to obtain permission from the owner of the affected property.

Permitting can be a lengthy process. Therefore, the interim status corrective action authority should be used to address significant environmental problems prior to issuance of the permit. With respect to 'regulated units', which cannot be permitted until the facility is in compliance with Part 270 requirements to assess ground-water contamination and develop a corrective action plan if necessary, Section 3008(h) may be particularly useful for compelling activities not addressed by the Part 265 and Part 270 regulations. For instance, interim corrective action measures could be required prior to permit issuance. For release from solid waste management units hazardous waste management units other than 'regulated units', Section 3008(h) may be used to compel interim measures, studies to characterize the nature and extent of contamination and the threat posed by the release, selection of remedy and design, construction and implementation of the remedy.

If an interim status facility is seeking an operating permit or will be required to obtain a post-closure permit, any 3008(h) action at that facility should be designed to meet the needs of the permitting process to the extent possible. If all necessary steps in a corrective measures program will not be completed prior to issuance of a permit, compliance schedules in the order should be developed so that they can be readily incorporated in the permit.

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EPA believes that the interim status corrective action authority will be useful in assuring environmentally sound closures of RCRA hazardous waste management units. Section 3008(h) may be used to supplement the interim status closure regulations. Approval of a closure plan does not limit the Agency's ability to use Section 3008(h), as well as other applicable corrective action authorities, to deal with releases of hazardous waste or hazardous constituients. In view of the number of interim status closures anticipated as a result of new statutory and regulatory requirements, the Regions are encouraged to employ the interim status corrective action authority to assure that RCRA hazardous waste management units are closed in a manner that properly protects human health and the environment.

Other Enforcement Authorities

Because of the broad scope of Section 3008(h) and the variety of activities that can be compelled, the interim status corrective action authority may be employed in conjunction with other enforcement authorities, although it may be appropriate to issue separate, concurrent orders due to differing hearing requirements. For example, where a violation is associated with a release of hazardous waste or hazardous constituients, a Section 3008(a) action should be used to require compliance with the regulation and assess penalties while a Section 3008(h) action could be employed to compel response actions that go beyond

regulatory requirements. Section 3013, which allows the Agency to compel owners or operators of treatment, storage or disposal facilities to conduct certain types of studies, may be used when the presence of hazardous waste may present a substantial threat but EPA does not have sufficient information to make a determination that there is or has been a release.

With regard to imminent and substantial endangerment actions, the legislative history makes it clear that enactment of Section 3008(h) does not alter the Agency's interpretation of Section 7003. H. Rep. No. 1133, 98th Cong., 2d Sess. 111 (1984). RCRA ⊥7003 or CERCLA ⊥106 actions are appropriate if conditions at an interim status facility may present an imminent and substantial endangerment and the Agency needs to move quickly to address the problem. The 'imminent hazard' provisions of RCRA and CERCLA may be especially helpful if the Agency wishes to take action against responsible parties other than or in addition to the current owner or operator.

VII. RESERVATION

The policies and procedures set forth herein and the internal office procedures adopted pursuant hereto are intended solely for the guidance of United States Environmental Protection Agency personnel. These policies and procedures are not intended to, do not, and may not be relied upon to create a right or benefit, substantive or procedural, enforceable at law by a party to litigation with the United States. The Agency reserves the right to take any action alleged to be at variance with these